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ABSTRACT

These four learning guides comprise one of four packages in the Workplace Literacy Teacher Training series that provides information and skills necessary for the user to become a successful instructor in an effective workplace literacy program. The guides in this package are designed to prepare the instructor to ensure that the workplace literacy program has the foundational elements in place. Each guide consists of these components: introduction, objectives, list of activities to help meet the objectives, readings followed by questions for reflection, application activity, evaluation guidelines, and annotated bibliography. The first guide looks at the instructional setting and addresses techniques that can be used to relate workplace literacy programming to the needs of business and industry. The second guide describes the process for using the results of job and literacy task analysis and skill identification to develop an overall training plan and specific performance objectives. The third guide presents a model format and guidelines for lesson plan development and a process for gathering feedback about teaching effectiveness and using that feedback to document successes and improve instruction. The fourth guide offers techniques for gathering and developing instructional materials for the program that reflect the reality of the workplace and are appropriate for the chosen objectives and learner needs and abilities. Contains an annotated bibliography of 13 entries. (YLB)

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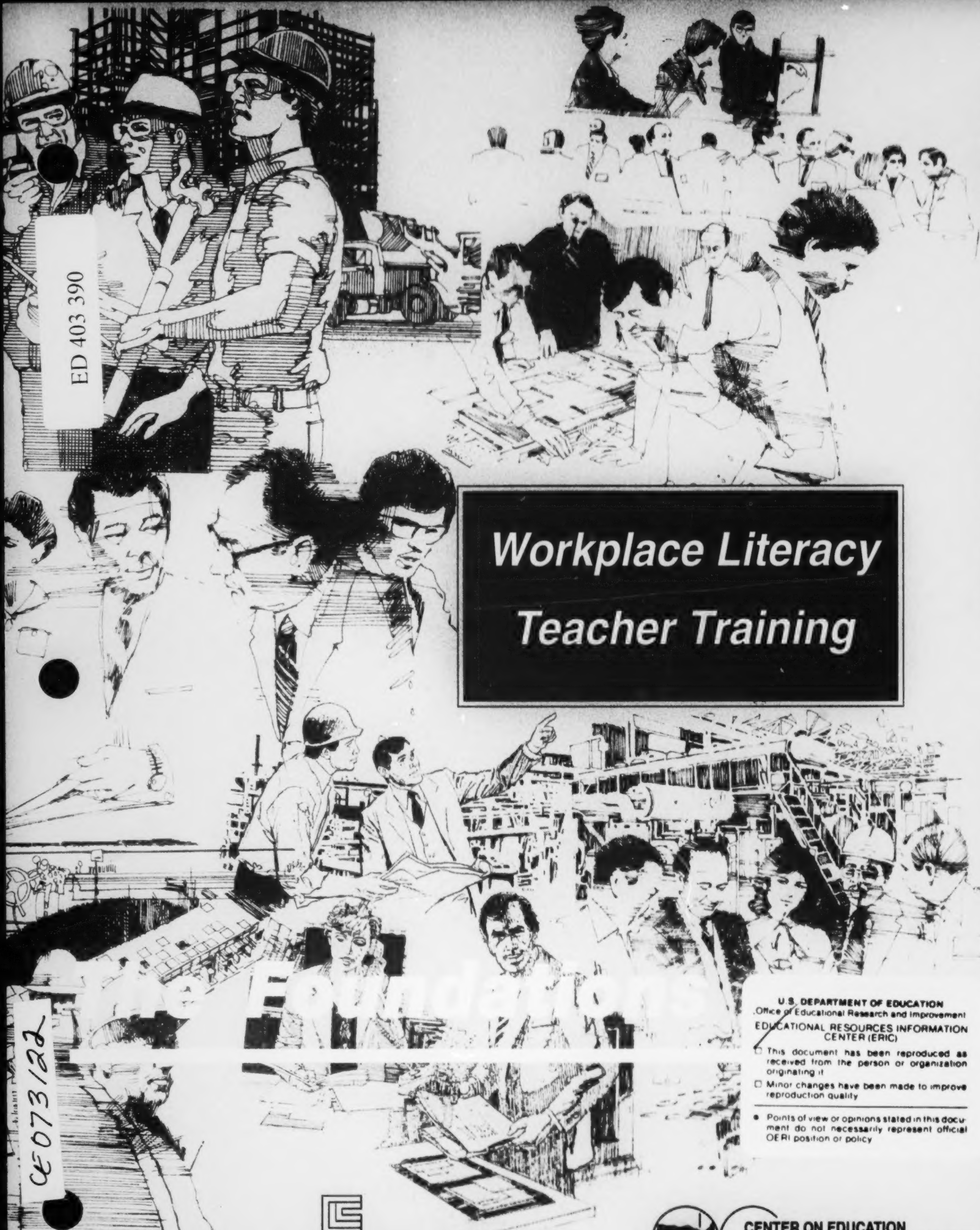

Workplace Literacy Teacher Training

Needs of Business & Industry

Training Plan & Performance Objectives

Planning & Evaluation

Literacy Resources

The Foundations

U.S. DEPARTMENT OF EDUCATION
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Workplace Literacy Teacher Training: The Foundations

This package contains the following learning guides:

- *Relate Workplace Literacy Programming to the Needs of Business and Industry*
- *Develop a Training Plan and Performance Objectives from the Job and Literacy Task Analyses*
- *Improve Teaching Effectiveness Through Planning and Evaluation*
- *Create Literacy Resources Using Workplace Materials*

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Preface

When the College of Lake County workplace literacy program staff approached us about the possibility of developing some teacher training materials to enhance their programming, the timing was ideal. At the Center on Education and Training for Employment (CETE), we were just completing our second major multi-year National Workplace Literacy Program grant, complemented by ongoing work with a series of clients over the same period of years on refining systematic processes for assisting work-based learning.

A salient driving force—indeed, evolving into our passion—was the vision of how teachers trained in the synergistically combined processes of problem-based learning, metacognitive reflection, and learner generation of job-context curriculum could become the instruments of learners' capitalizing on their own expertise and potential. We were motivated to generalize beyond the College of Lake County's specific needs to capture this vision.

The proposed learning guides were divided up among seasoned staff for draft development. Then they were subjected to intensive review and enhancement by each of the content advisors (Johanna DeStefano, Susan Imel, and myself)—three individuals who had joined their diverse perspectives successfully over the years, evolving into a team with considerable expertise in workplace learning. Finally, the consistency and coherence of the materials was crafted by Lois Harrington with an unerring sense of the components of curriculum.

It was my pleasure to coordinate the contributions. I would like to express my appreciation on behalf of CETE to the College of Lake County for the farsighted thinking of its workplace literacy staff and for giving us the opportunity to stop and take stock of what we have learned for the purpose of sharing it.

Sandra G. Pritz
Curriculum Project Director
Research Specialist, CETE/OSU

Foreword

Ninety-five percent of the instructors in the College of Lake County's Community Education and Economic Development Division are part-time instructors. It is from this division pool of instructors that the National Workplace Literacy Program draws. Many of them have long-time teaching experience in classroom-based adult education—but usually no experience in the workplace setting or with outcome-based instruction. Thus, staff development for part-time instructors is an ongoing process. Even though an orientation to the program and a series of workshops effectively address some of their needs, more options for gaining workplace education knowledge is necessary to help the instructors make a successful transition into the workplace. Supplementing the more "traditional" forms of staff development with a series of self-study teacher training materials was the plan.

One of the main objectives of the National Workplace Literacy grant at the College of Lake County (CLC) is to provide adequate and appropriate staff development for workplace literacy instructors. In order to fulfill this objective, CLC worked in conjunction with the Center on Education and Training for Employment at The Ohio State University to develop this plan and offer an effective alternative approach to workplace literacy staff development.

The materials have been piloted by the CLC workplace instructors, and the feedback has been positive concerning their coverage of workplace content and context as well as their provision for a variety of professional development options. This model has allowed the instructors to enhance their professional skills and knowledge, to share their philosophies and ideas with grant staff and workplace personnel, to gain sufficient exposure to resources, and to improve the quality of instruction.

The National Workplace Literacy Program hopes that by making these packages available, other educational programs and/or businesses will be able to utilize and adapt the materials to fit their workplace literacy programs and to foster the growth of their instructors as professionals in a new and exciting field.

Mary Kay Gee, Director
National Workplace Literacy Project
College of Lake County

Introduction

Any instructional program must be built on solid foundations. The guides in this package are designed to prepare you to complete the steps required to ensure that your workplace literacy program has the foundational elements in place to ensure success.

The first learning guide looks at the instructional setting—the workplace—and addresses the various techniques that can be used to identify the specific goals and objectives that the various clients and stakeholders have for the program, the literacy skills they hope it will develop in workers, and the needs they hope it will meet.

The second learning guide describes the process for using the results of needs analysis and skill identification to develop an overall training plan and specific instructional objectives. Educational concepts that should be considered in developing these tools are also described.

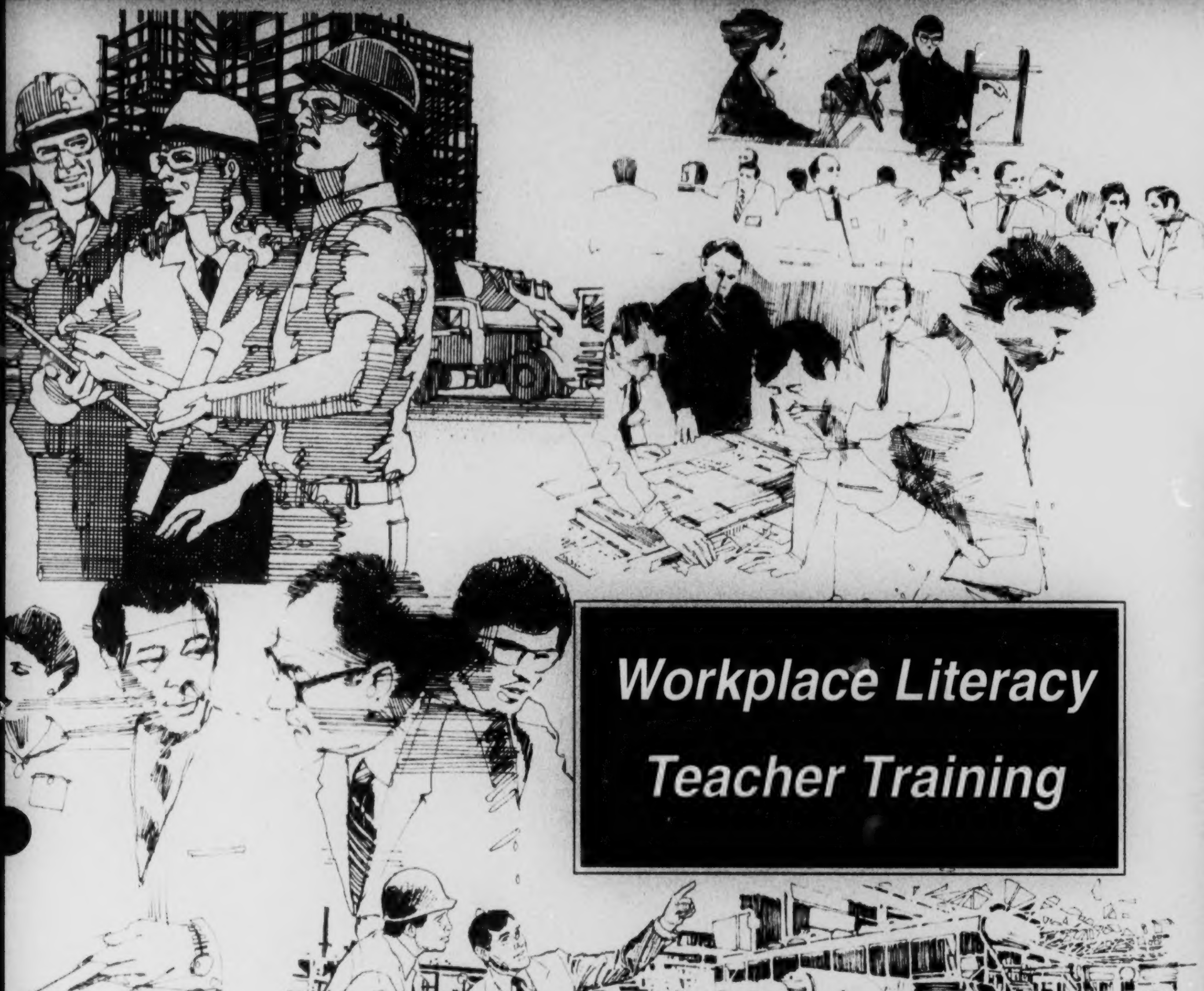
The third learning guide presents a model format and guidelines for lesson plan development. To ensure instructional accountability, it also describes a process for gathering feedback about lesson effectiveness from various clients and stakeholders and using that feedback to document instructional successes and further improve instruction in the future.

The fourth learning guide offers numerous techniques for gathering and developing instructional materials for the program which reflect the reality of the workplace and which are appropriate for the chosen objectives and for the needs and abilities of the learners.

Other packages in the Workplace Literacy Teacher Training series provide the additional information and skills you need to become a successful instructor in an effective workplace literacy program:

- *The Context* package looks at the unique environment and culture involved in providing education and training to adults in a workplace. The three learning guides in the package focus first on the workplace itself, then on the worker as learner, and finally on the instructor.
- The four learning guides in the *Strategies for Instruction* package focus on the skills at the heart of such programs—reading, communication, mathematics, as well as English as a second language—and present effective strategies for teaching these skills in the workplace context.
- The four learning guides in the *Strategies for Program Implementation* package provide guidance in managing instruction, assessing learner performance, individualizing instruction, and using tutoring and mentoring to enhance learners' literacy development.

Needs of Business & Industry



Workplace Literacy Teacher Training

The Foundations

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Relate Workplace Literacy Programming to the Needs of Business and Industry

Introduction

When an adult basic educator uses the everyday experiences and problems of the class as a foundation for basic skills instruction, she or he is placing instruction within the *context* of the *functions* of the learners' actual lives. In workplace literacy programs, too, instruction must be set in a functional context to be meaningful. In this case, the context is the learner's job functions. Keep in mind that part of the job is the larger setting as it relates to others throughout the company.

In order to set instruction within the job context, someone must first identify what that context is in very specific terms. Two questions must be answered:

- What *job tasks* do the workers perform?
- What *basic skills* are required to perform those tasks successfully?

A number of ready sources of information exist on the literacy tasks needed by America's workers. The reports of The Secretary's Commission on Achieving Necessary Skills (SCANS) identify five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. These materials provide a good starting place, with a national focus across American business and industry.

Another source of information is the survey. A literacy provider; governmental agency at the local, state, or regional level; or a business or industry may use a survey to determine the technical and basic skills needed by workers in a given geographic area or particular business/ industry. Typically, such a survey is designed to identify a need for or interest in training at a company level.

To identify the job tasks and related basic skills for a specific occupation, two techniques are used: the job or occupational analysis and the literacy task analysis. Depending upon your role in the organization providing the literacy training, you may or may not be responsible for the conduct of such analyses. Nevertheless, since the results provide the foundation for the entire workplace literacy program and its content and activities, you need to be familiar with these analysis tools and the processes involved in carrying them out. Furthermore, there are numerous ways for an instructor and learners to revisit these analyses for in-course decision making.

This learning guide is designed to introduce you to the tools—local, state, and national surveys; job analysis; and literacy task analysis—used to identify the job-related literacy tasks that will guide your later work in creating functional-context curricula for your workplace literacy programs.

Objectives

- Demonstrate knowledge of the concept of *functional context* by applying it to the job of workplace literacy instructor.
- Use survey techniques to identify an "employer's" perceptions of the basic skill needs of his/her workforce.
- Identify benefits of job and literacy task analysis and utilize the methodology to uncover task-related literacy skills in work you observe in your daily life.
- Relate workplace literacy programming to the needs of business and industry by conducting modified job and literacy task analyses for a selected occupation.

To Help You Meet the Objectives

- Study the material that follows:

  Reading 1: Functional Context in Workplace Literacy

  Reading 2: National, Regional, and Local Surveys of Literacy Tasks
  SCANS: What Work Requires of Schools
  Business and Industry Questionnaire
  Supervisor's Assessment Form
  Tips for Conducting Survey Interviews

  Reading 3: Company-Specific Needs:
  Job Analysis and Literacy Task Analysis

- Reflect on the questions posed after each reading. The questions are designed to help you clarify and extract meaning from the reading that can be helpfully applied. There are benefits to both individual and interactive reflection—
  - ~ As an individual, consider how you would apply the information either in the program to which you are already assigned or in a program to which you might be assigned.
  - ~ If you are able to discuss these questions with other instructors or program staff, try to get other perspectives on the reading. Compare notes on the ways the ideas can be and have been applied in their experience. If the experiences differ, help each other probe the possible reasons for the differences.
- Complete the Application Activity.
- Evaluate your own competencies using the Evaluation Guidelines. This is an opportunity to assess your own learning and identify any areas in which you feel less competent or confident. If indicated or desired, take advantage of the opportunity to review the related material on the Annotated Bibliography. You may also want to seek out a more experienced person who can be a mentor to you on this topic, helping you assess your competency and acting as a resource person.

- Ask your reviewer to evaluate your skills also. Be sure to note the input from the reviewer that can provide the basis for your further competency building.

To Help the Reviewer Guide and Evaluate Learner Performance

These learning guides have been designed to allow for maximum flexibility of use. For those individuals using them for professional development (without ties to a formal program), the guides allow for self-study. Such use may, however, limit the opportunity for interaction and practice in a group setting. Therefore, if learners are completing these guides in a group setting under your direction, it is strongly recommended that you identify such opportunities and capitalize upon them.

Reflection questions at the end of each Reading and an Application Activity and Evaluation Guidelines at the end of each learning guide provide opportunities for you, as a reviewer, to monitor learner progress and evaluate learner performance on the workplace literacy knowledge and skills being developed. However, your expectations should be based somewhat on the learner's background (e.g., previous instructional experience) and the learner's progress in the program. Individuals with previous experience as instructors in workplace literacy programs should be expected to extend their thinking and activities beyond the level expected of those without such experience.

For example, if the learner is asked to "define company culture," individuals ***without*** instructional experience would be expected to respond solely on the basis of their reflections concerning the readings provided within the guide. The responses expected of individuals with instructional experience, however, should go beyond the readings, incorporating their real-world experiences as well. Likewise, as individuals complete more and more of the learning guides, their work should reflect that progress. Knowledge and skills gained in earlier guides should be ***integrated*** into their reflections and activities as they work through later guides.

Flexibility can also be provided concerning how the learner will demonstrate competency. At a minimum, the learner should submit ***written*** descriptions, definitions, and explanations to demonstrate successful completion of the Application Activity. These should be evaluated—by both you and the learner—using the criteria provided in the Evaluation Guidelines. If feasible, however, you should also arrange to meet with the learner to discuss his or her written documentation. At that time, you could also pose hypothetical or actual situations related to the skill criteria and ask the learner how he or she would handle those situations. Another possibility would be to ask individuals to perform the skill as part of a presentation or demonstration to others in the class or group.

It is also desirable that, whenever possible, you and the learner identify opportunities for expanding on the learning experiences presented in the guide—ways for the learner to apply the learning more deeply and broadly. The question, "What plans do you have for learning more about the skill covered in this guide?" could well be a standard one. In many cases, the learner can use his or her work in the Application Activity as a building block for further exploration.

In summary, the learning situation is not one in which strict criterion-referenced standards based on percentage attainment or mastery levels are suitable, nor would one mode of demonstration be feasible—or appropriate—for everyone. You and the learner should discuss and reach agreement in advance on the level of achievement expected and mode of demonstration to be used so as to create the optimal learning experience. The intent is for the learner's professional development to be competency-based, rigorous, and designed to motivate further learning, yet sensibly adapted to the situation and to the learner's needs and abilities. Hopefully, the learners will carry this flexible philosophy and approach into their own workplace literacy programs.

Functional Context in Workplace Literacy

The notion that basic skills should be taught in relation to the context in which they will be applied (*functional context)* is not a new idea. What is new is the public's perception of the criticality of the issue. In the face of changes in technology and in the skills required of workers in the workplaces of today and tomorrow, it is painfully clear that workers must have a repertoire of the necessary basic skills and be able to apply them on the job. According to J. W. Philippi[1]—

> For every job, there are tasks that are critical to its performance. The varying degrees to which workers can perform these critical tasks determine their levels of job proficiency and, collectively, determine the quality of the work force. Competent performance of job tasks requires more than knowledge of job content. Superior workers are those who are able to identify job needs and efficiently use basic skills applications (that is, reading, writing, speaking, listening, computation, problem solving) to complete job tasks.[2] These skill applications are known as workplace literacy.
>
> Workplace literacy tasks require different applications of skills from those taught and used in academic contexts. Competent workers now must be able to use:
>
> - Job reading processes for locating information and for using higher level thinking strategies to draw conclusions from multiple sources in order to solve problems.
> - Occupational speaking and writing processes for organizing clear communication of ideas and for mastering those thinking skills that enable clarification, analysis, elaboration, and extension of spoken or written information.
> - Workplace applications of mathematical concepts and processes for calculating information, collecting data, and solving problems that go beyond basic number concepts and computation skill drill and enable workers to acquire proficiency levels in reasoning and interpretation.
>
> These workplace skill applications all require the use of cognitive strategies and are seldom used in isolation, but generally cluster in combinations related to performance of specific job tasks.

The benefits of functional context, which explain the motivation for its use as a basis for workplace literacy training, are summarized on the following page.

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[1] J. W. Philippi, "Basic Skills/Workplace Literacy Training," in *Human Resources Management & Development Handbook*, 2nd ed., edited by W. R. Tracey (New York, NY: AMACOM, 1994), p. 888.

[2] L. Mikulecky, J. Ehlinger, and A. Meenan, *Training for Job Literacy Demands: What Research Applies to Practice* (University Park, PA: The Pennsylvania State University, Institute for the Study of Adult Literacy, 1987).

Basis for Functional-Context Approach

The functional context approach is . . . ***relevant*** to the needs of adult learners—a key to their ability to learn and a key to motivation.

> Since adults' readiness to learn is frequently affected by their need to know or do something, they tend to have a life-, task-, or problem-centered orientation to learning as contrasted to a subject-matter orientation.[3]

The functional context approach is . . . ***effective.***

> A study of reading instruction provided to military enlisted men found that those receiving 120 hours of *general* reading instruction averaged an improvement of 0.7 grade levels in reading ability. Enlisted men being trained with *workplace materials* improved 2.1 grade levels when reading work-related materials during the same amount of time.[4]

The functional context approach is . . . ***efficient*** because it builds on workers' rich backgrounds of knowledge and experience.

> Learners experience a direct transfer of the reading skills they learn to their job performance.[5]

The basic skills learned are . . . ***transferable***. General literacy skills, on the other hand, do not transfer.

> More than 50 years ago, researchers concluded that generic reading instruction did not improve performance in specific content area tasks. . . . More recent studies have demonstrated that job reading tasks *differ* from academic reading tasks.[6]
>
> In the study of enlisted men, it was found that their literacy abilities improved while they were in general literacy classes, but that within 8 weeks, 80 percent of the gains were lost .[7]
>
> When a person cannot transfer learning to the real-world situations, it is not possible to continue practicing what has been learned.[8]

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[3] M. S. Knowles, "Introduction: The Art and Science of Helping Adults Learn," in *Andragogy in Action: Applying Modern Principles of Adult Learning* by M. S. Knowles et al. (San Francisco, CA: Jossey-Bass, 1984).

[4] T. G. Sticht, *Basic Skills in Defense* (Alexandria, VA: Human Resources Research Organization, 1982).

[5] T. G. Sticht, *Reading for Working: A Functional Literacy Anthology* (Alexandria, VA: Human Resources and Research Organization, 1975).

[6] J. W. Philippi, "Matching Literacy to Job Training: Some Applications from Military Programs," *Journal of Reading* v31/n7 (April 1988): 660.

[7] Sticht, 1982, op. cit.

[8] L. Mikulecky, D. Henard, and P. Lloyd, *A Guidebook for Developing Workplace Literacy Programs* (Bloomington, IN: Indiana University, 1992), p. 5. (ED 348 580)

Reflection on Reading 1

- Presumably you are studying this learning guide because your job (or one of your jobs) now or in the future is that of workplace literacy instructor, and completion of these learning guides is part of a training program. Briefly describe the functional context of this training program in which you are involved.

- Try to generate a short list of literacy tasks (reading, speaking, writing , and mathematical processes) related to your job as a workplace literacy instructor. (Focus on the skills ***you*** need to have in order to perform your job functions, not those that will be the focus in your instruction of others.)

- Give some examples of how the basic skills of critical thinking, problem solving, and decision making function in the context of your job as a workplace literacy instructor.

National, Regional, and Local Surveys of Literacy Tasks

There have been numerous efforts over the past 40-50 years to identify, in general, the basic skills needed by the members of the American workforce.

One such type of study involves the identification of transferable skills: those basic skills that are common to most occupations and are, therefore, the proper focus of attention in occupational training programs. For example, Pratzner and Russell[1] identified the following transferable skills/knowledge/abilities needed for work:

I. Group Problem Solving

  A. Interpersonal Skills (self-directed, flexible, assertive, open, curious to learn, able to share/teach, responsible, understanding of behavior)

  B. Group Process Skills (role theory/norm theory, techniques of structuring discussions, cooperative attitude, leadership)

  C. Problem-Solving Skills (problem identification, problem-solving process steps, data collection and analysis)

  D. Decision Making (risk assessment, data review, identification of gaps in information, values, process models/choice models)

  E. Planning (goal setting, establishment of measurable action steps)

  F. Communication (with individuals and with groups; verbal, writing, listening, and presentation skills)

  G. Thinking/Reasoning (generating alternatives, estimating and approximating, giving and getting meaning, collecting information, classifying, finding patterns, generalizing, sequencing and scheduling, using criteria, reshaping information, judging information, communicating effectively)

II. Organization and Management

  A. Business Economics (relationships between costs and income, market standing/ environmental conditions, basic economic theory, reward structure)

  B. Business Operations (relationships between functions/systems, coordination of resources)

  C. Management (management theory, relationships between performance and other factors, models of communication, power/control/authority/delegation, human resource development, feedback/appraisal, job analysis, change processes)

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[1] F. C. Pratzner and J. F. Russell, *The Changing Workplace: Implications of Quality of Work Life for Vocational Education* (Columbus, OH: National Center for Research in Vocational Education, The Ohio State University, 1984), pp. 25-26. (ED 240 283)

D. Statistical Quality Control (sampling, quality standards, cause and effect, graphs and charts, data analysis, mathematics and statistics)

E. Introduction to Quality of Work Life (definitions of terms and concepts, philosophy, role of QWL at various levels in companies, union/nonunion involvement)

According to a publication by Carnevale, Gainer and Meltzer,[2] the skills employers want can be structured in a framework consisting of seven skill groups:

- Learning to learn
- Reading, writing, and computation
- Oral communication and listening
- Creative thinking and problem solving
- Personal management (self-esteem, goal setting, motivation, personal/career development)
- Group effectiveness (interpersonal skills, negotiation, teamwork)
- Organizational effectiveness and leadership

A Canadian study by Shields et al.[3] pinpointed the following broad tasks that employers identified as needed by employees across nine industrial sectors:

- Communications (reading, writing, and other linguistic competencies)
- Mathematics
- Science
- Computer Literacy
- Work adjustment

A critical study for the American workforce is the SCANS Report.[4] After spending 12 months talking to business owners, public employers, supervisors, union officials, and workers, the commission identified five competency areas, which, in conjunction with a three-part foundation of skills and personal qualities, lie at the heart of job performance today (see pp. 12-15). If high-performance workplaces are to become the norm in the United States, says the commission, the SCANS know-how must not only inform the instructional programs of the nation's schools; it must also form the foundation of adult education and training programs.

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[2] A. P. Carnevale, L. J. Gainer, and A. S. Meltzer, *Workplace Basics: The Skills Employers Want* (Alexandria, VA: American Society for Training and Development, 1989).

[3] B. Shields, R. Embree, M. Taylor, and L. Wallace, *Occupational Literacy* (Toronto: Ontario Ministry of Skills Development, 1989).

[4] Secretary's Commission on Achieving Necessary Skills, *What Work Requires of Schools: A SCANS Report for America 2000* (Washington, DC: SCANS, U.S. Department of Labor, June 1991). (ED 332 054)

As you begin to think about the basic skills required of the workers in your workplace literacy programs, a review of these more-global studies is a good place to start. They provide a clear reminder that the term *basic skills* is not synonymous with the 3 Rs. If basic skills are to be taught in the same integrated way in which they are used on the job, remembering to bring in the need for problem solving and decision making is critical.

Another way information about the basic skills needs of workers may be gathered for your workplace literacy program is for its managers to conduct their own local or regional surveys to gather information from employers, supervisors, and/or other employees. Such surveys may be conducted via the mail using written survey forms (see pp. 16-20) or by structured interviews (see pp. 21-22).* By reviewing the resulting information, you can begin to narrow in your focus from national needs to local needs. This will prepare you for the work of developing the training plan and performance objectives, which is covered in the next learning guide in this series. In that step, you will move from your knowledge of basic skills requirements in general to an assessment of the specific basic skill needs of the learners in your class—as felt and perceived by them.

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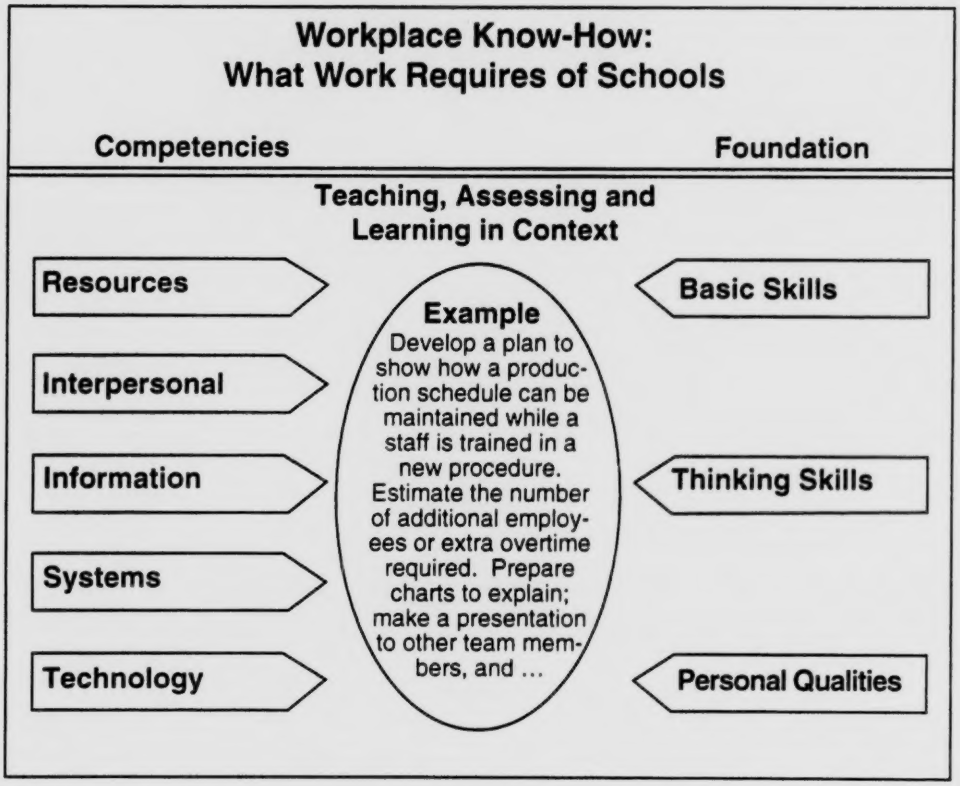
* NOTE: These same interview tips will be helpful in the classroom situation as well when you are trying to assess the needs of particular learners in the context of their jobs.

SCANS: WHAT WORK REQUIRES OF SCHOOLS
What Work Requires of Schools: A SCANS Report for America 2000
pp. 21, B-1, B-2, C-2, C-3
Washington, DC: Secretary's Commission on Achieving Necessary Skills,
U.S. Department of Labor, June 1991 (ED 332 054)


Workplace Know-How:
What Work Requires of Schools
Competencies
Foundation
Teaching, Assessing and Learning in Context
Resources
Interpersonal
Information
Systems
Technology
Example
Basic Skills
Thinking Skills
Personal Qualities

Develop a plan to show how a production schedule can be maintained while a staff is trained in a new procedure. Estimate the number of additional employees or extra overtime required. Prepare charts to explain; make a presentation to other team members, and ...

Definitions: The Competencies

Resources

- ***Allocates Time***—Selects relevant, goal-related activities; ranks them in order of importance; allocates time to activities; and understands, prepares, and follows schedules.
- ***Allocates Money***—Uses or prepares budgets, including making cost and revenue forecasts; keeps detailed records to track budget performance; and makes appropriate adjustments.
- ***Allocates Material and Facility Resources***—Acquires, stores, and distributes materials, supplies, parts, equipment, space, or final products in order to make the best use of them.
- ***Allocates Human Resources***—Assesses knowledge and skills and distributes work accordingly, evaluates performance, and provides feedback.

Interpersonal

- ***Participates as a Member of a Team***—Works cooperatively with others and contributes to group with ideas, suggestions, and effort.
- ***Teaches Others***—Helps others learn.
- ***Serves Clients/Customers***—Works and communicates with clients and customers to satisfy their expectations.
- ***Exercises Leadership***—Communicates thoughts, feelings, and ideas to justify a position; encourages, persuades, convinces, or otherwise motivates an individual or groups, including responsibly challenging existing procedures, policies, or authority.
- ***Negotiates***—Works towards an agreement that may involve exchanging specific resources or resolving divergent interests.
- ***Works with Cultural Diversity***—Works well with men and women and with a variety of ethnic, social, or educational backgrounds.

Information

- ***Acquires and Evaluates Information***—Identifies need for data, obtains it from existing sources or creates it, and evaluates its relevance and accuracy.
- ***Organizes and Maintains Information***—Organizes, processes, and maintains written or computerized records and other forms of information in a systematic fashion.
- ***Interprets and Communicates Information***—Selects and analyzes information and communicates the results to others using oral, written, graphic, pictorial, or multi-media methods.
- ***Uses Computers to Process Information***—Employs computers to acquire, organize, analyze, and communicate information.

Systems

- ***Understands Systems***—Knows how social, organizational, and technological systems work and operates effectively within them.
- ***Monitors and Corrects Performance***—Distinguishes trends, predicts impact of actions on system operations, diagnoses deviations in the function of a system/organization, and takes necessary action to correct performance.
- ***Improves and Designs Systems***—Makes suggestions to modify existing systems to improve products or services, and develops new or alternative systems.

Technology

- ***Selects Technology***—Judges which set of procedures, tools, or machines, including computers and their programs, will produce the desired results.
- ***Applies Technology to Task***—Understands the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems.
- ***Maintains and Troubleshoots Technology***—Prevents, identifies, or solves problems in machines, computers, and other technologies.

Definitions: The Foundation

Basic Skills

- ***Reading***—Locates, understands, and interprets written information in prose and documents—including manuals, graphs, and schedules—to perform tasks; learns from text by determining the main idea or essential message; identifies relevant details, facts, and specifications; infers or locates the meaning of unknown or technical vocabulary; and judges the accuracy, appropriateness, style, and plausibility of reports, proposals, or theories of other writers.
- ***Writing***—Communicates thoughts, ideas, information, and messages in writing; records information completely and accurately; composes and creates documents such as letters, directions, manuals, reports, proposals, graphs, flow charts;

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uses language, style, organization, and format appropriate to the subject matter, purpose, and audience. Includes supporting documentation and attends to level of detail; checks, edits, and revises for correct information, appropriate emphasis, form, grammar, spelling, and punctuation.

- ***Arithmetic***—Performs basic computations; uses basic numerical concepts such as whole numbers and percentages in practical situations; makes reasonable estimates of arithmetic results without a calculator; and uses tables, graphs, diagrams, and charts to obtain or convey quantitative information.
- ***Mathematics***—Approaches practical problems by choosing appropriately from a variety of mathematical techniques; uses quantitative data to construct logical explanations for real-world situations; expresses mathematical ideas and concepts orally and in writing; and understands the role of chance in the occurrence and prediction of events.
- ***Listening***—Receives, attends to, interprets, and responds to verbal messages and other cues such as body language in ways that are appropriate to the purpose; for example, to comprehend, to learn, to critically evaluate, to appreciate, or to support the speaker.
- ***Speaking***—Organizes ideas and communicates oral messages appropriate to listeners and situations; participates in conversation, discussion, and group presentations; selects an appropriate medium for convening a message; uses verbal language and other cues such as body language appropriate in style, tone, and level of complexity to the audience and the occasion; speaks clearly and communicates a message; understands and responds to listener feedback; and asks questions when needed.

Thinking Skills

- ***Creative Thinking***—Uses imagination freely, combines ideas or information in new ways, makes connections between seemingly unrelated ideas, and reshapes goals in ways that reveal new possibilities.
- ***Decision Making***—Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternatives.
- ***Problem Solving***—Recognizes that a problem exists (i.e., there is a discrepancy between what is and what should or could be), identifies possible reasons for the discrepancy, and devises and implements a plan of action to resolve it. Evaluates and monitors progress, and revises plans as indicated by findings.
- ***Seeing Things in the Mind's Eye***—Organizes and processes symbols, pictures, graphs, objects or other information; for example, sees a building from a blueprint, a system's operation from schematics, the flow of work activities from narrative descriptions, or the taste of food from reading a recipe.
- ***Knowing How to Learn***—Recognizes and can use learning techniques to apply and adapt new knowledge and skills in both familiar and changing situations. Involves being aware of learning tools such as personal learning styles (visual, aural, etc.), formal learning strategies (notetaking or clustering items that share some characteristics), and informal learning strategies (awareness of unidentified false assumptions that may lead to faulty conclusions).
- ***Reasoning***—Discovers a rule or principle underlying the relationships between two or more objects and applies it in solving a problem. For example, uses logic to draw conclusions from available information, extracts rules or principles from a set of objects or written text; applies rules and principles to a new situation, or determines which conclusions are correct when given a set of facts and a set of conclusions.

Personal Qualities

- ***Responsibility***—Exerts a high level of effort and perseverance towards goal attainment. Works hard to become excellent at doing tasks by setting high standards, paying attention to details, working well, and displaying a high level of concentration even when assigned an unpleasant task. Displays high standards of attendance, punctuality, enthusiasm, vitality, and optimism in approaching and completing tasks.
- ***Self-Esteem***—Believes in own self-worth and maintains a positive view of self; demonstrates knowledge of own skills and abilities; is aware of impact on others; and knows own emotional capacity and needs and how to address them.
- ***Sociability***—Demonstrates understanding, friendliness, adaptability, empathy, and politeness in new and ongoing group settings. Asserts self in familiar and unfamiliar social situations; relates well to others; responds appropriately as the situation requires; and takes an interest in what others say and do.
- ***Self-Management***—Assesses own knowledge, skills, and abilities accurately; sets well-defined and realistic personal goals; monitors progress toward goal attainment and motivates self through goal achievement; exhibits self-control and responds to feedback unemotionally and nondefensively; is a "self-starter."
- ***Integrity/Honesty***—Can be trusted. Recognizes when faced with making a decision or exhibiting behavior that may break with commonly held personal or societal values; understands the impact of violating these beliefs and codes on an organization, self, and others; and chooses an ethical course of action.

BUSINESS AND INDUSTRY QUESTIONNAIRE
Literacy Needs Assessment or LNA:
A Tool for Assessing the Literacy Needs of a Local Community by C. S. Talan
Chicago, IL: Altrusa International Foundation, 1987 (ED 285 973)

Please fill in to the best of your ability. Answer with percentages if you do not know exact numbers. Answer DO NOT KNOW if you do not have an estimate at all.

Name of Agency ________________________________

Agency Address ________________________________

____________________ Zip ____________

Agency Phone # ________________________________

Person Completing Survey __________________________

Title __________________________

1. How many different adults 16 and over do you have in your employ or in your membership each year? ____________
2. How many of these employees / members do not speak English well? ____________
3. Do you require a written test for employment / membership / promotion?

   ______ yes If yes, continue to question #4.

   ______ no If no, proceed to question #7.
4. How many potential members / employees have obvious literacy difficulties with this written test the first time they take it? ____________
5. How many potential members/ employees must take this test a second time? ____________ a third time? ____________
6. If you find that an employee needs help with basic skills, do you refer him to a service provider in the community? If so, what is the name of the provider(s)? ____________
7. How many of your employees / members have difficulty filling out forms or reading company / group literature? ____________
8. In your opinion, if literacy instruction were free and easily available, would your employees / members be interested?

   ______ yes If yes, proceed to question #10.

   ______ no If no, continue to question #9.

9. Which of the following might your employees / members perceive as barriers to participation in adult literacy programs.

_______ time / day services offered

_______ fees or material costs

_______ location of services

_______ transportation

_______ lack of awareness of service

_______ stigma of illiteracy

_______ child care

_______ other, please specify

____

10. Does or did your business / group provide literacy services of any kind? _______

If yes, please describe ___________________________________

____

____

11. Do you believe that your employees / members could benefit from literacy classes? _______

If no, why not? ___________________________________

____

____

12. Do you believe that adequate literacy services are available in our community? _______

If no, why not? ___________________________________

____

____

13. Would you be supportive of an employee who admitted a need for literacy services? _______

If no, why not? ___________________________________

____

____

14. If you could provide literacy services on your premises with little or no cost to you as an employer or group, would you be interested in learning more about how to set up such a service? _______

If yes, under what circumstances would you be willing to provide in-house literacy services?

____

____

If no, why would you ***not*** be interested in an in-house literacy service? _______________

____

____

Thank you for helping us by filling out this questionnaire.

SUPERVISOR'S ASSESSMENT FORM
"Workplace ESL and Literacy: A Business and Education Partnership" by P. Kinsey
In *Basic Skills for the Workplace*, edited by
M. C. Taylor, G. R. Lewe, and J. A. Draper, 310-312
Toronto, Ontario: Culture Concepts Inc., 1991 (ED 333 180)

Supervisor's Name ____________________

Company ____________________

Department ____________________

1. What type of communication do you have with the employees?

   before shift instructions ____________________

   machine breakdown ____________________

   other ____________________

2. What method of communication is used?

   one on one ____________________

   group ____________________

   meetings ____________________

   How often? ____________________

3. Do you have an office? ____________________

   Do workers come to you? ____________________

   For what reasons do they come to you? ____________________

   How often? ____________________

4. Do you use interpreters? ____________________

   How often? ____________________

5. How do employees report illness? ____________________

   To whom? ____________________

6. What language is needed in punching in and out? ____________________

7. How are plant rules and safety communicated to employees? ______

8. Do employees need to fill in forms or reports in their jobs? ______

How often? ______

9. Do you have to deal with misunderstanding between ethnic groups? ______

10. Does the lack of oral or written English hinder advancement for employees? ______

11. Does the lack of numeracy hinder advancement for employees? ______

12. Does the lack of technical training hinder advancement for employees? ______

13. Do you post information on the bulletin board? ______

14. Is there a need for Statistical Process Control training incorporated into classes? ______

15. Have limited reading and writing skills been identified as a problem with some of the employees?

______

If so, how many? ______

16. Is there a need for upgrading skills in English and Mathematics for some of the employees in order for them to deal with either technical or communications changes in the company? ______

If so, how many? ______

17. What language elements would you like your workers to learn?

    job-related words ______________________

    understanding instructions ______________________

    explaining problems ______________________

    dealing with the unexpected ______________________

    safety ______________________

    machine breakdown reporting and explaining ______________________

    expressing facts ______________________

    social language ______________________

    memo writing ______________________

    report writing ______________________

    charting ______________________

18. For what reasons do you want your employees to go to English classes?

    ____

    ____

    ____

TIPS FOR CONDUCTING SURVEY INTERVIEWS

Adapted from *An Organizational Approach to Workplace Basic Skills: A Guidebook for Literacy Practitioners* by S. Waugh, 27-29
Ottawa, Ontario: Ottawa YMCA/YWCA, 1992

General Tips

- Conduct interviews in a private place; assure confidentiality.
- Start from ignorance. Do not assume. Find out the stories of the interviewees.
- Use open-ended questioning techniques rather than questions that require a yes or no answer.
- Pick up and use the work-related language of the interviewees when probing for further information.
- Use a variety of communication strategies including silence, paraphrasing, and empathy.
- Ask questions in different ways if the first way doesn't work.
- Be flexible, accommodate different communication styles. Don't make assumptions about what different behaviors may or may not mean. Check out all your assumptions. Allow extra time.
- Be neutral; this is an information-gathering stage rather than a problem-solving one. This does not mean, however, that you cannot show empathy.

Sample Questions: Workers/Staff, Management, or Union Leadership

Icebreaker

- What do you do in your job? What's a day in the life of a [worker, manager, union leader] like here?
- How long have you worked here?
- What kind of changes have you seen in your time here?

If the interviewee is a *manager*, also ask—

- How many people work for you?
- What is the makeup of your staff in terms of age, sex, race, culture?
- What jobs do they do?

If the interviewee is a *union leader*, also ask—

- How long have you been on the union executive? What are the major issues you face as a union rep?

Education and Training Issues

- *Workers/Staff:* What sort of reading, writing, math, and problem-solving do you do in your job?

  Management: What sort of reading, writing, math, and problem solving do you do in your job? Your employees?

  Union Leadership: What sort of reading, writing, and math do your members have to do in their jobs and in a union context?
- In what areas might [people here, employees, union members] want to brush up on their reading, writing, math, and problem-solving skills? What written material here at the workplace is the most difficult to follow?
- What, if anything, could address the issues you have just raised—could make it easier for [people here, employees, your members] to do these things?
- What kind of orientation and training do people receive here? How useful were they? What would improve them?
- What kinds of upgrading programs would be useful for people here?
- What's your sense about how people at this workplace feel about further learning on a scale of 1 to 10?

Other Information

- *Workers/Staff:* Do you work in a team or do you work alone? Who do you communicate with at work? What do you communicate about (in writing and orally)?

  Management & Union Leadership: How would you describe the management philosophy here?
- How do people get promoted here? What might hold them back?
- How could written and oral communication be better here at the workplace?
- What would you like to learn so much that you would pay someone to let you learn it?
- How would you describe labor/management [or management/labor] relations?
- What potential barriers are there to learning?

Reflection on Reading 2

- Ask a peer (fellow teacher, family member, friend) to role-play an employer using their own workplace as a frame of reference. Using the materials provided in this reading—lists of global basic skills, survey forms—as a basis, develop an interview protocol (structured list of questions and procedures) for identifying basic skill needs, and administer it to the "employer."

- After you have conducted your interview, "debrief" the "employer" concerning what he or she thought about the questions asked and the way in which they were asked. Based on the feedback, what modifications would you make in the survey for future use?

Company-Specific Needs: Job Analysis and Literacy Task Analysis

A *job*, or occupational, *analysis* is designed to systematically identify the tasks of a job. A *literacy task analysis* focuses on each job task and identifies the basic skills required to perform it. Conventional approaches used to accomplish these analyses are quite time-consuming and labor-intensive. When used to analyze jobs and tasks at a national level, the time and effort may be well spent. However, instructional planners at a local level need techniques that can be done quickly and efficiently—and produce reliable results—so that the findings are available in a timely fashion to serve as a foundation for the instruction to be provided. Two techniques that meet these needs are the DACUM approach to job analysis and the DELTA approach to literacy task analysis.

DACUM Job Analysis

The DACUM job analysis operates on the premise that—

- expert workers are better able to describe and define their jobs than anyone else;
- any job can be described effectively and sufficiently in terms of the tasks that successful workers in that occupation perform; and
- all tasks have direct implications for the knowledge, skills, and attitudes that workers must possess in order to perform the tasks successfully.

The DACUM job analysis starts with a carefully selected group of 5–12 expert workers from the occupation being studied—men and women with reputations for being "the best" at their jobs. Over a 2-day period, this *DACUM Committee* is carefully guided through the followed steps by a trained and certified DACUM facilitator:

1. Orientation
2. Review of the job or occupational area
3. Identification of the duties or the general areas of job responsibility
4. Identification of the specific tasks performed in each of the duties
5. Review and refinement of the task and duty statements
6. Sequencing of the task and duty statements
7. Identification of positive worker traits and behaviors; general skills and knowledge; and tools, equipment, supplies, and materials needed
8. Other options as desired (e.g., identification of entry-level tasks)

The committee participates in modified and structured small-group brainstorming sessions, which tap their collective expertise and produce consensus among committee members. A DACUM recorder documents their duty and task statements on cards, which are posted on the wall so that the job profile develops throughout the process (duties posted vertically to the left; tasks posted horizontally next to the relevant duty). The result of the committee's work is a *DACUM chart* (see p. 29) depicting the tasks or competencies involved in the occupation being studied. The DACUM chart can be used as a basis for curriculum development, student learning progress records, training needs assessments, worker performance evaluations, and competency test development.

The approach is efficient, typically requiring only 2 days, and costs are relatively low compared to other approaches. The resulting analysis is of exceptionally high quality as a result of the synergistic interaction of the workers. And equally important, the participants find the activity to be professionally stimulating and rewarding—and strong business and industry linkages and support result from their involvement.

DELTA: DACUM-Enhanced Literacy Task Analysis

The conventional approach to a literacy audit is helpful for establishing the job context, but it involves some drawbacks:

- Observation and testing of employees may raise their anxieties.
- Employees participate individually only in interviews and are otherwise passive.
- The resulting information may be too global to provide the detail required to provide an adequate foundation for a job-context program.
- The information may not be focused toward literacy used for the key outcomes of decisions and problem solutions, ever more needed in business and industry.
- The process may not be as cost-effective as other alternatives.

A key to effectively addressing the overall significant need for enhanced literacy of workers is to assure—through research—that the information used as a basis for the "solution" provides an adequate (integrated, yet detailed) profile of literacy needs and that the process used to secure the information encourages an environment conducive to positive participation by employees and to their feeling of ownership of the resulting program. The DELTA process fulfills these requirements.

A refinement of the conventional literacy audit process, DELTA is carried out by extending the DACUM job analysis process to identify the literacy skills (including reading, writing, speaking, listening, and computation) needed to perform each task. While DACUM is being used to identify the job tasks, the DACUM recorder unobtrusively notes any comments made providing clues to the communications, math, or science skills needed to perform job tasks. As the cards are placed on the wall, extra space is left between the rows to allow for the insertion of basic skills cards later during the DELTA process.

Once the DACUM job analysis has been completed, the DELTA facilitator leads the committee through the identification of basic skills related to job tasks. For example:

- For a machinist to *order parts as needed* (task), it is necessary to *read the parts catalog.*
- For an electrical technician to *repair a transformer* (task), it is necessary to *apply the theory of electrical power transmission.*
- For a sales manager to *record average monthly sales for the year* (task), it is necessary to *calculate an arithmetic mean.*

The basic skills areas addressed are reading, writing, oral communication (speaking and listening), mathematics, science, reasoning, problem solving, and decision making (see definitions, p. 30). The expert workers often find that they sometimes perform tasks without consciously thinking about all the knowledge they are applying. During the DELTA process, they need to visualize themselves performing each task and express what they usually take for granted.

The resulting chart profiles both tasks and their related basic skills (see partial chart, p. 31), providing a quick visual picture of the overall job. The full profile chart for Carpenter actually includes 119 tasks in 15 duty areas: basic carpentry procedures, layout work, concrete form work, framing, stairs, roof framing, exterior finish, interior systems, interior finish, flooring, cabinetry, energy-efficient construction, special carpentry applications, pile driving, and millwrighting. And in its original 8½" x 14" form, the basic skills are readable. The partial chart was provided to show you how the tasks and basic skills are "profiled." So that you can see the content of those basic skills, let's look at some of the skills identified:

- Carpenters need to *read* manufacturers' specs, MSDSs (materials safety data sheets), change orders, and manufacturers' stamps on materials.
- They need to *read* scales—a different kind of "reading."
- In the area of *math*, they must use a standard function calculator; record measurements; add and subtract fractions; convert decimals to fractions; and back-check operations by measurement, computation, and triangulation.
- They must *communicate* with tenants and clients about procedures, interact with co-workers about safety, and alert the supervisor to problems.
- They will need to *record* field notes.

Note that these basic skills are expressed as they are used in the performance of workplace tasks, rather than referenced to school courses, which would be far more abstract and less specific.

The completed profile for an occupation provides clear information about the basic skills required on the job and relates the basic skills to the specific job tasks to be performed. The profile can be verified by mailed survey to extend the opportunities for work and supervisor representation, as well as to request judgments about such issues as criticality, frequency of performance, and so forth.

Where the chart indicates that certain tasks are heavily dependent on basic skills—and where company input indicates that workers are experiencing problems, perhaps because of changes brought about by new technology—those tasks can be selected for observation on the plant floor. Through observations and probing questions, detailed information about how literacy skills are used in performing the steps of the task can be gathered. Any written materials used in performance of the task can also be obtained and later analyzed to determine the level of reading difficulty. The foundation for your workplace literacy program is at this point solidly established.

This foundation profile need not merely be implicit and embedded in the training plan by instructors and instructional planners who retain ownership of it. It can be kept visible (literally hung on the wall, for example) as a context-bound overview and framework for the program to which instruction can be anchored by reference. This allows for the profile to undergo continuous scrutiny and change over time.

Partial DACUM Profile: Drafting

	Duties	Tasks				
A	**Conduct Field Work and Make Preliminary Presentations**	A-1 Take measurements	A-2 Determine site orientation	A-3 Make site inspections of work being done	A-4 Use surveying techniques	A-5 Develop working sketches
B	**Prepare Final Drawings**	B-1 Determine type and size of medium	B-2 Prepare surface for drawing (pounce)	B-3 Determine details to be shown (isometric, auxiliary)	B-4 Lay out drawings	B-5 Apply basic principles and practices pertaining to drafting specialty
		B-14 Make assembly drawings (isometric)	B-15 Make perspective drawings	B-16 Make tracings	B-17 Check drawings for completeness & accuracy	
C	**Communicate with Others**	C-1 Consult with peers	C-2 Consult with clients	C-3 Consult with crafts-persons & technicians	C-4 Communicate with supervising personnel	C-5 Communicate with subcontractors & vendors
D	**Use Reference Materials**	D-1 Use French's & Svenson's References	D-2 Use Architectural Graphics Standards	D-3 Use Sweet's Catalog	D-4 Follow company standards	D-5 Conduct library research
E	**Make Mathematical Calculations**	E-1 Convert inches to metrics	E-2 Convert fractions to decimals	E-3 Make geometric calculations	E-4 Make trigonometric calculations	E-5 Apply basic principles of physics
F	**Prepare Written Documents**	F-1 Develop written instructions or specifications	F-2 Generate job orders or worksheets	F-3 Write change orders	F-4 Submit requisitions for services	F-5 Submit requisitions for drafting supplies
G	**Check Drawings**	G-1 Check accuracy of dimensions & scale	G-2 Check coordination of prints	G-3 Check revisions	G-4 Check for completeness	G-5 Check line quality
H	**Reproduce Drawings**	H-1 Select type of reproduction	H-2 Make copies of drawings	H-3 Make copies of blueprints	H-4 Make reproductions of blueprints	H-5 Make photographic reproductions
I	**Maintain Document Storage**	I-1 File masters	I-2 File media materials	I-3 Retrieve media & masters	I-4 Maintain file of revisions	I-5 Maintain drawing log (notebook or index file)
J	**Continue Education**	J-1 Participate in inservice education classes and seminars	J-2 Study trade publications	J-3 Participate in trade societies	J-4 Study job-related books	J-5 Participate in trade shows and exhibits

SOURCE Adapted from a DACUM analysis done by Durham Technical Institute, Durham, North Carolina

Basic Skills: Definitions

As used in workplace literacy programs, the term *basic skills* refers to those tasks—primarily cognitive and language- or number-related—that are needed as a foundation for learning and for the performance of technical tasks. Basic skills are acquired abilities.

The basic skills necessary for most workplace settings can be defined as follows:

- Communication[1]—transmission and reception of information by means of oral language use, gestures, or other symbols such as letters of the alphabet
    - ~ Reading—using cognitive, affective, and psychomotor processes to comprehend written communication
    - ~ Writing—communicating through the use of the graphic forms of a language
    - ~ Speaking—communicating through oral language use
    - ~ Listening—understanding speech
- Mathematics—purposeful manipulation of quantitative data and relational concepts in a symbolic language, using logical problem-solving methods
- Problem Solving—resolution of a situation, usually perceived as difficult, through definition, analysis, and the selection and implementation of potentially fruitful strategies until the situation is effectively controlled and no longer considered difficult

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[1] Communication skills definitions were adapted from T. L. Harris et al., eds., *A Dictionary of Reading and Related Terms* (Newark, DE: International Reading Association, 1982).

Partial DELTA Profile: Carpenter

A. Basic Carpentry Procedures

A-1 Acquire tools and tool kit	A-2 Use personal safety equipment according to OSHA standards	A-3 Demonstrate use of safety and fire equipment	A-4 Demonstrate identification, handling, use, and disposal of hazardous materials
• Read manufacturers' specs	• Interact with coworkers about safety • Attend contractors's job site safety presentations		• Read MSDS sheets (materials safety data sheets)
A-5 Use, handle, and store all tools, materials, and equipment	A-6 Use construction drawings	A-7 Use instruments and tools for layout work	A-8 Read blueprints
• Interpret warning signs		• Use standard function calculator	• Read change orders • Visualize finished product
A-9 Perform rigging and signaling operations			
• Read manufacturers' stamps on materials • Communicate with tenants and clients about procedures			

B. Layout Work

Basic skills for all tasks in Group B

- Record measurements
- Discuss changes with supervisors
- Read scales
- Add and subtract decimals
- Convert decimals to fractions
- Record field notes
- Add and subtract angular measures
- Compute grades using percentages
- Transfer readings to stakes
- Signal partner (distance)
- Identify job-site problems
- Back check operations by measurement, computation, and triangulation, Pythagorean Theorem, trigonometric calculation of angles

B-1 Establish corners and elevations; read blueprints	B-2 Determine wall, ceilings, and floor locations	B-3 Determine location of footers and all below grade structures	B-4 Determine location of columns and all above grade structures
		• Verify field dimensions • Alert supervisor to problems	
B-5 Determine site work requirements	B-6 Lay out components for construction		
• Read specifications • Read testing procedures			

Reflection on Reading 3

- The DACUM job analysis is one of the first steps in the total DACUM process. DACUM stands for ***D***eveloping ***a*** ***C***urricul***um***. What do you think are the benefits of starting curriculum development with such a process?

- The DACUM/DELTA analyses use a consensus process, which means strong validity is built into the procedure. The reading mentions that verifying the resulting profile chart allows you to further validate your findings and gather data about the criticality of each task, frequency of performance, and so on. Can you think of some other benefits of sending the profile out to others in business and industry for verification?

- Review the partial DELTA profile chart on p. 31, and note how it itemizes basic skills that are embedded in specific job tasks. Now review the partial DACUM chart on p. 29. It shows only technical job tasks and no basic skills . . . or does it? What can you deduce from that chart?

- As you go about your daily business, observe the people you see working (in stores, banks, schools, etc.). See how many basic skills you can identify embedded in the job tasks they perform.

Relate Workplace Literacy Programming to the Needs of Business and Industry

- Ask a peer (fellow instructor, family member, or friend) to serve as your DACUM/ DELTA "committee." Have them identify an occupation/job (preferably outside the education field) with which they are familiar, and then guide them in identifying at least one duty for that job and the job tasks related to that duty. You could use the job description in the *Dictionary of Occupational Titles* (DOT) as a starting point if they need a little help on this.

- Define *basic skills* for your "committee" (what are they, what do they look like, examples), and then guide your "committee" in identifying any basic skills embedded (*functional context*) in the job tasks listed earlier.

TOPIC: Relate Workplace Literacy Programming to the Needs of Business and Industry

Evaluation Guidelines

Directions: Check your competency with the following criteria:

Learner Self-Check Did you—		Review Checklist Did the learner—
☐	1. Identify at least one duty area that described a broad job function for the occupation?	☐
☐	2. Identify specific job tasks performed within that duty area?	☐
☐	3. Ensure that the "committee" understood the concept of basic skills?	☐
☐	4. Use a variety of strategies (probing, providing examples, clarifying) in order to draw out all the basic skills required to perform each job task?	☐
☐	5. Ensure that the "committee" was guided and encouraged, not prodded and pushed?	☐
☐	6. Obtain a finished product that clearly, completely, and succinctly described the basic skills for each job task?	☐

Learner: ______________________________

Reviewer: ______________________________

Level of Performance: If the evaluation results indicate a need for further competency development—or if the learner wishes to pursue the topics covered in further breadth or depth—please refer to the supplementary resources described in the Annotated Bibliography, which follows.

Mikulecky, L.; Henard, D.; and Lloyd, P. *A Guidebook for Developing Workplace Literacy Programs.* A Publication of Indiana's Model Workplace Literacy Training Program. Bloomington, IN: Indiana University, 1992. (ED 348 580)

Chapter 3, "Analyzing Job and Literacy Tasks," provides an overview of things to do in analyzing job tasks in the workplace, including collecting literacy materials, interviewing a variety of workers, observing employees on the job, and determining and prioritizing the tasks involved in a job.

Taylor, M. C., and Lewe, G. R. "How to Plan and Conduct a Literacy Task Analysis." In *Basic Skills for the Workplace*, edited by M. C. Taylor, G. R. Lewe, and J. A. Draper. Toronto, Ontario: Culture Concepts, 1991. (ED 333 180)

The first section discusses how to prepare and plan for a literacy task analysis. Important characteristics of a job and task analysis are described, and an outline of a planning checklist indicating some of the questions that need to be considered is also included. The second section describes the five basic steps of a literacy task analysis and highlights a number of techniques that can help a trainer collect and analyze job information in relation to basic skills requirements. The third section poses some questions that are frequently asked about literacy task analysis and provides some answers in order to help readers decide whether this is a process that would be suitable for their own use.

Reports of Studies Identifying Workplace Basics

Business Council for Effective Literacy. "Literacy in a New Language." *BCEL Newsletter,* January 1987.

Carnevale, A. P.; Gainer, L. J.; and Meltzer, A. S. *Workplace Basics: The Essential Skills Employers Want.* San Francisco, CA: Jossey-Bass, 1990.

Committee for Economic Development *Investing in Our Children: Business and the Public Schools.* New York, NY: CED, 1985. (ED 261 117)

Gainer, L. *ASTD Update: Basic Skills.* Alexandria, VA: American Society for Training and Development, February 1988. (ED 291 882).

Henry, J. F., and Raymond, S. *Basic Skills in the U.S. Work Force: The Contrasting Perceptions of Business, Labor, and Public Education.* New York, NY: Center for Public Resources, November 1982. (ED 229 456)

Hull, W., and Sechler, J. *Adult Literacy: Skills for the American Work Force.* Columbus, OH: National Center for Research in Vocational Education, The Ohio State University, 1987. (ED 284 980).

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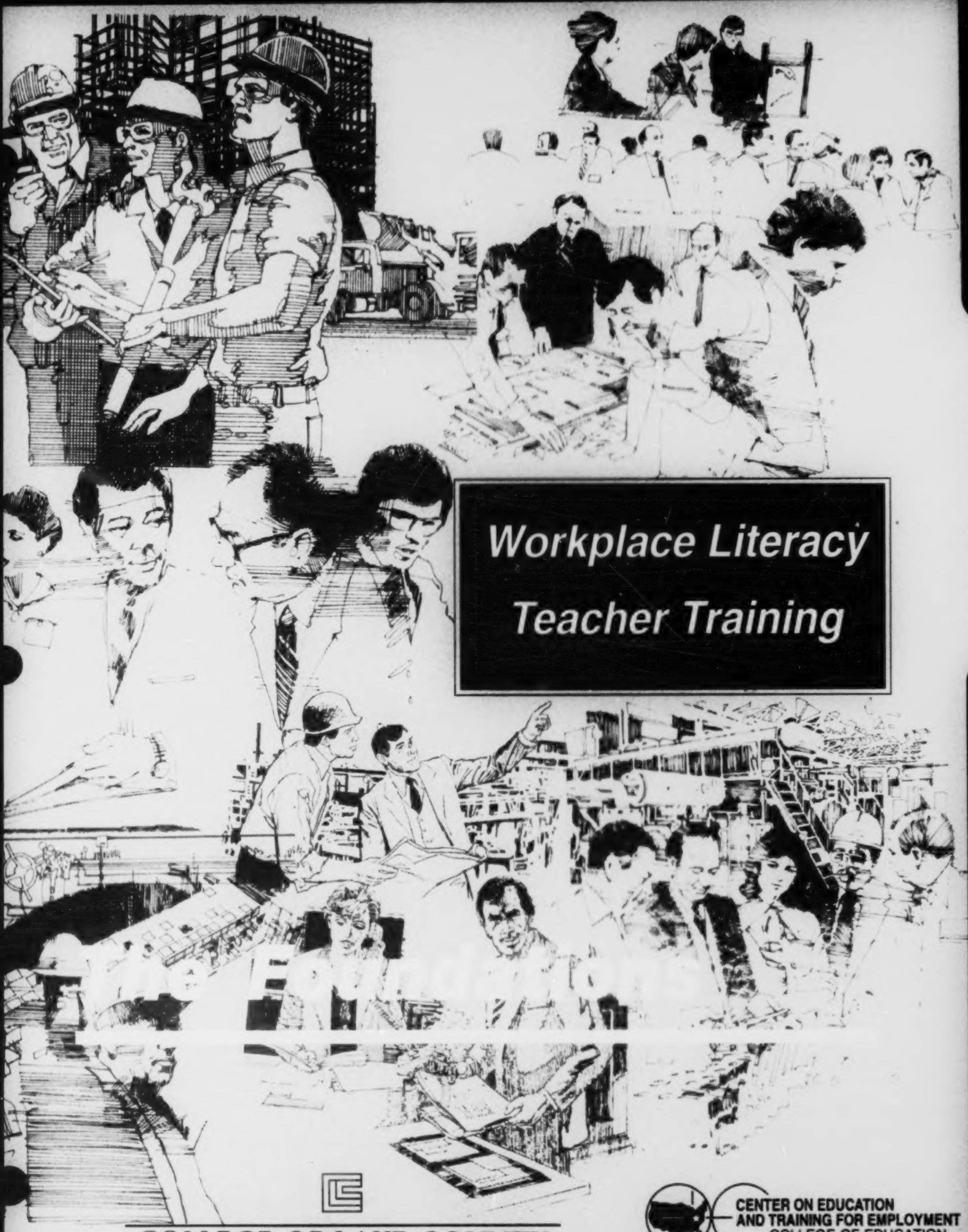

Workplace Literacy
Teacher Training

Training Plan & Performance Objectives

The Foundations

COLLEGE OF LAKE COUNTY

CENTER ON EDUCATION
AND TRAINING FOR EMPLOYMENT
COLLEGE OF EDUCATION
THE OHIO STATE UNIVERSITY

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Develop a Training Plan and Performance Objectives from the Job and Literacy Task Analyses

Introduction

Once a job analysis and literacy task analysis have been completed, certain critical information is available to you, the instructor:

- Main duties comprising the occupation
- Job tasks comprising each main duty
- Literacy skills employed in the performance of each job task
- Job materials used in the course of job performance

A final step that may have been performed is the task verification, in which a different sample, or broader sample, of expert workers is surveyed to determine whether the tasks identified do indeed represent ***all*** the tasks of the job and the ***critical*** tasks of the job. They may also be asked to rate each task according to how important it is to work performance, how difficult it is to perform and/or to learn, and how frequently it is performed.

All this information serves to define the tasks performed and skills possessed by ***expert*** workers in the occupation. It does not, however, define the tasks and skills that will be the focus of training. Time is, after all, limited. Furthermore, not all tasks involve problems, and literacy training is not the answer to all job performance problems. Problems may relate to other conditions such as antiquated or poorly maintained equipment, counterproductive management practices, or inadequate screening procedures during hiring, just to name a few.

Typically, those conducting the analyses will also have obtained information about which job tasks constitute problems for the workers. This information may come from a number of useful sources:

- Interviews with managers and supervisors in which they are asked questions such as the following: Which tasks do workers find difficult to perform? Which ones are performed imperfectly, with major mistakes or minor errors? For which tasks must supervisors spend a great deal of time correcting mistakes and/or providing additional instruction? Do you have to rewrite job aids for them to be read and understood; if so, how often? Are there new technologies on the job requiring additional or increased skill levels? Note that these questions focus primarily on job tasks, an area in which those in the workplace can be presumed to have some expertise, and not on literacy skills.
- Observations of workers' performance on the job, supplemented by informal discussion about what they are doing and what, if anything, is causing them problems.
- Review of samples of the writing workers actually produce on the job (e.g., memos written, forms completed).

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Based on all this information, the analysts can begin to identify which of all the tasks identified are the proper focus of the literacy program. To develop the parameters of your ***specific*** workplace literacy program, then, you need to fill in the broad outline of the instruction to be provided in the form of a training plan and performance objectives, and to do that, you need to focus on the learners. You need to find out something about their present skills levels and what they perceive their needs to be—what they would like to get from the learning experience.

This learning guide is designed to help you move through the mechanical steps of training plan and performance objective development in a meaningful way by looking at and thinking about some of the varying—and sometimes seemingly conflicting—principles and philosophies that should undergird your efforts.

Objectives

- Identify whose needs should properly be the focus of the workplace literacy program: learner needs, job task needs, company needs.
- Use critical teaching and learning principles to transform a learning experience from one that used traditional instructional approaches to one using holistic, student-centered approaches.
- Identify the three essential components of a performance objective and the importance of each.
- Develop a training plan and performance objectives from the job and literacy task analyses for a workplace literacy program you have been assigned to teach.

To Help You Meet the Objectives

- Study the material that follows:

Reading 1:	Whose Needs Are You Serving?
Reading 2:	Learner Needs/Critical Principles: Essential Input to Training Plan Development
	Translating Literacy Task Analyses into Instructional Blueprints
	Balancing Instructional Principles and Realities
	Learner-Centered Instruction
	Learner-Centered Instruction: A Postscript
	Participatory Education
	Collaborative Learning in Adult Education
	Holistic Approaches
	Metacognition: Making Thinking Visible
	Reflective Practice in Adult Education

Reading 3: Development of Performance and Enabling Objectives

- Reflect on the questions posed after each reading. The questions are designed to help you clarify and extract meaning from the reading that can be helpfully applied. There are benefits to both individual and interactive reflection—
    - ~ As an individual, consider how you would apply the information either in the program to which you are already assigned or in a program to which you might be assigned.
    - ~ If you are able to discuss these questions with other instructors or program staff, try to get other perspectives on the reading. Compare notes on the ways the ideas can be and have been applied in their experience. If the experiences differ, help each other probe the possible reasons for the differences.
- Complete the Application Activity.
- Evaluate your own competencies using the Evaluation Guidelines. This is an opportunity to assess your own learning and identify any areas in which you feel less competent or confident. If indicated or desired, take advantage of the opportunity to review the related material in the Annotated Bibliography. You may also want to seek out a more experienced person who can be a mentor to you on this topic, helping you assess your competency and acting as a resource person.
- Ask your reviewer to evaluate your skills also. Be sure to note the input from the reviewer that can provide the basis for your further competency building.

To Help the Reviewer Guide and Evaluate Learner Performance

These learning guides have been designed to allow for maximum flexibility of use. For those individuals using them for professional development (without ties to a formal program), the guides allow for self-study. Such use may, however, limit the opportunity for interaction and practice in a group setting. Therefore, if learners are completing these guides in a group setting under your direction, it is strongly recommended that you identify such opportunities and capitalize upon them.

Reflection questions at the end of each Reading and an Application Activity and Evaluation Guidelines at the end of each learning guide provide opportunities for you, as a reviewer, to monitor learner progress and evaluate learner performance on the workplace literacy knowledge and skills being developed. However, your expectations should be based somewhat on the learner's background (e.g., previous instructional experience) and the learner's progress in the program. Individuals with previous experience as instructors in workplace literacy programs should be expected to extend their thinking and activities beyond the level expected of those without such experience.

For example, if the learner is asked to "define company culture," individuals ***without*** instructional experience would be expected to respond solely on the basis of their reflections concerning the readings provided within the guide. The responses expected of individuals with instructional experience, however, should go beyond the readings, incorporating their real-world experiences as well. Likewise, as individuals complete more and more of the learning guides, their work should reflect that progress. Knowledge and skills gained in earlier guides should be ***integrated*** into their reflections and activities as they work through later guides.

Flexibility can also be provided concerning how the learner will demonstrate competency. At a minimum, the learner should submit ***written*** descriptions, definitions, and explanations to demonstrate successful completion of the Application Activity. These should be evaluated—by both you and the learner—using the criteria provided in the Evaluation Guidelines. If feasible, however, you should also arrange to meet with the learner to discuss his or her written documentation. At that time, you could also pose hypothetical or actual situations related to the skill criteria and ask the learner how he or she would handle those situations. Another possibility would be to ask individuals to perform the skill as part of a presentation or demonstration to others in the class or group.

It is also desirable that, whenever possible, you and the learner identify opportunities for expanding on the learning experiences presented in the guide—ways for the learner to apply the learning more deeply and broadly. The question, "What plans do you have for learning more about the skill covered in this guide?" could well be a standard one. In many cases, the learner can use his or her work in the Application Activity as a building block for further exploration.

In summary, the learning situation is not one in which strict criterion-referenced standards based on percentage attainment or mastery levels are suitable, nor would one mode of demonstration be feasible—or appropriate—for everyone. You and the learner should discuss and reach agreement in advance on the level of achievement expected and mode of demonstration to be used so as to create the optimal learning experience. The intent is for the learner's professional development to be competency-based, rigorous, and designed to motivate further learning, yet sensibly adapted to the situation and to the learner's needs and abilities. Hopefully, the learners will carry this flexible philosophy and approach into their own workplace literacy programs.

Whose Needs Are You Serving?

Imagine that you are now sitting with a pile of information from the job and literacy task analyses in front of you. It's time to develop a training plan—a broad outline of the instruction you plan to provide for your students. As you review the materials from the workplace and your literacy program managers, here are the needs you discover.

The *workplace manager* knows exactly what she wants from the program. She's been spending a lot of money on equipment maintenance through outside contractors. She wants to have workers who can use the equipment manual to troubleshoot and repair the equipment themselves. That way she can save money on repair bills and on the costs associated with equipment downtime.

The *job and literacy task analysis* process identified 50 job tasks that workers have trouble performing as a result of inadequate levels of literacy skills. Granted, there's some overlap of literacy skills, but still, you only have a 40-hour training program in which to cover all those skills.

Your *literacy program managers* state that your program must focus on the expressed needs of the learners in order for learning to occur. Thus, if the workers want to increase their writing power in order to write letters to the manager and the government concerning changes needed to empower workers, then that's what the focus of instruction should be.

Reflection on Reading 1

- You have just read about three potentially conflicting needs that must be met by your program. If you were forced to pick just one, what would you do and why?
  - ~ Would you design your program strictly in response to the stated need of the employer who is, after all, paying for the program?
  - ~ Would you give first priority to the set of job and literacy tasks since that's the route to accountability?
  - ~ Would you comply with the managers' request and focus first and foremost on the needs expressed by the learners?
- What do you think would be the consequences of the approach you just selected?
- Clearly, the best approach to dealing with the conflicting needs would be to devise a solution that addresses all the needs somehow. Develop a brief plan outlining a strategy that would serve this purpose.

Learner Needs/Critical Principles: Essential Input to Training Plan Development

Ideally, you can meet with learners before having to prepare a final training plan for instruction. The information you have obtained about job tasks and related literacy skills, as well as about any management expectations for the program, need to be *balanced* with the needs and interests of the learners before a *meaningful* training plan can be developed.

If the analysts/program planners selected a tentative list of tasks for training from the total list based on the "problem" areas identified, you can use this list as a basis in drawing out learners' felt needs. The question is not whether to address the needs identified through analysis or the needs of the learner; the question is how to address both in a realistic and balanced way. Which of the needs identified through analysis are of particular concern to the learners? Which tasks give them the most trouble? Which related literacy skills would they most like to develop?

This type of needs-sensing session would also be a good time to introduce learners to the nature of the functional-context, competency-based approach and its value for them. The concept of offering workplace literacy instruction in a functional context was covered in several earlier learning guides. Simply put, it means that instruction is set in the context in which the learner must perform (function); in workplace literacy programs, this context is the job setting. For the learners, this means that they will be focusing on tasks/skills in the training program that will apply directly to their jobs. There's a direct payoff.

Competency-based (or performance-based) instruction is a systematic way of developing and delivering instruction so that it derives from the tasks of the job and leads to successful performance of those tasks, as measured by occupational standards. It is not a new educational fad; it developed during the 1970s and has been growing in legitimacy ever since. Competency/ performance-based education has the following essential characteristics:

- Competencies to be achieved (i.e., job tasks to be mastered) by the learners are rigorously identified, verified, and made public in advance of instruction.
- Criteria for assessing achievement and the conditions under which achievement will be assessed are explicitly stated and made public in advance.
- The instructional program provides for the individual development and evaluation of each of the competencies specified.
- Learners progress through the instructional program, at their own best rate, by demonstrating the attainment of specified competencies.
- Assessment of competency takes the learner's knowledge and attitudes into account but requires actual performance of the competency as the primary source of evidence.

Competency/performance-based education also has the following facilitating, or supporting, characteristics:

- Instruction is individualized to the maximum extent possible.
- Learning experiences are guided by frequent feedback.
- Instruction is individually paced rather than time-based.
- Instruction is field-centered, using realistic work situations and actual on-the-job experiences.
- Instructional materials used are keyed to the competencies to be achieved, support individualization, and provide for a variety of learning styles and teaching strategies.
- Program completion is based on satisfactory achievement of all specified competencies.
- Learner grades, if used, reflect the level of competency achievement attained.

Again, the approach is designed to provide a direct payoff to the learner: a direct link between the competencies addressed in training and the tasks to be performed on the job, resulting in improved competency on the job.

This approach need not ignore the other-than-job roles the learners play in their lives and the many ways in which these same competencies can serve them well in those roles. In fact, pointing out some of these other applications can serve to enhance motivation. One of the important aspects of basic skills is the fact that they are basic—or foundational—for many types of tasks. Thus, learning basic skills results in magnified power over many aspects of a person's life. Although workers have in common the time they can apply (practice) newly acquired or improved basic skills on the job, they can benefit from practicing the skills elsewhere as well—and thus reinforcing their use.

Once you and the learners have discussed their needs and interests and the general approaches to be used in the program—functional context and competency-based—your next task is to prepare the training plan. A procedure to guide you in this task is described in the next article by Philippi.

TRANSLATING LITERACY TASK ANALYSES INTO INSTRUCTIONAL BLUEPRINTS

Adapted from "How to Design Instruction:
From Literacy Task Analyses to Curriculum" by J. W. Philippi
In *Basic Skills for the Workplace*, edited by M. C. Taylor, G. R. Lewe, and J. A. Draper, 237-245
Toronto, Ontario: Culture Concepts Inc., 1991 (ED 333 180)

Successful curriculum developers qualify as "master jugglers." As they plan instruction, they must simultaneously consider the parameters for content, time, ability levels, media and format. By carefully studying the various subtasks and skills contained in the documented literacy task analysis (LTA), the collected print and computer screen materials, as well as equipment sketches and/or photos taken on the job, the curriculum developer can begin to identify key elements in the thinking processes necessary for application of basic skills to the job tasks.

Many times, the analyzed task will be too complex to teach in one lesson. It will need to be broken down into subtasks for units of instruction. Examine the sample LTA shown to the right. Notice the complexity of the subtasks. Even if instruction were to be scheduled for an 8-hour session, learners would be unable to absorb all the necessary information in one sitting. To facilitate learning, it is recommended that complex subtasks be treated in short, individual lessons or units of instruction.

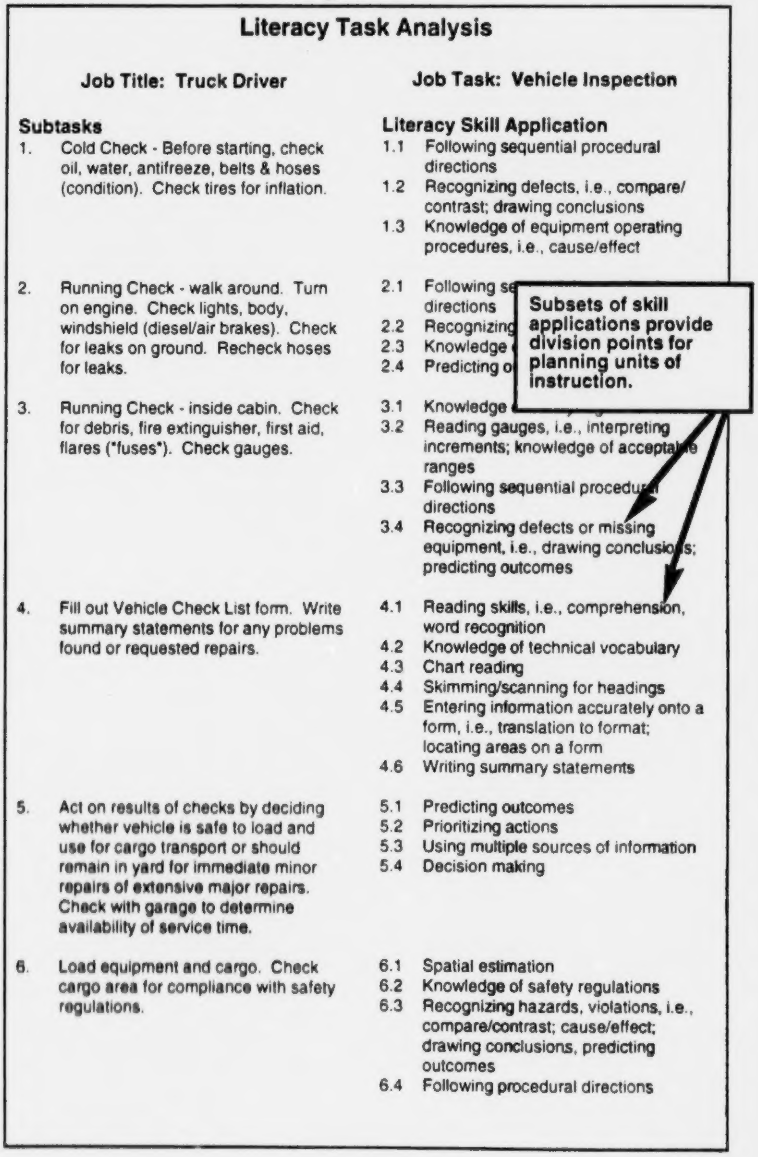
Within the LTA for Vehicle Inspection, there are six subtasks. Competently performing any one of the subtasks requires the application of a group of specific thinking strategies and basic skills. These subsets of cognitive activities suggest natural breaking points for division of instruction into manageable units. For example, for Subtasks 1 and 2—Cold and Running Walk-Around Checks—a possible lesson could focus on—

- Following procedural directions
- Sequencing steps
- Recognizing defects (compare/contrast, cause/effect, drawing conclusions)

A possible lesson for Subtask 3—Running Check Inside Cabin—could focus on—

- Reading gauges (various increments)
- Interpreting gauges (knowledge of ranges, cause/effect, predicting outcomes, drawing conclusions.

Figure No. 1



Literacy Task Analysis

Job Title: Truck Driver — **Job Task: Vehicle Inspection**

Subtasks	**Literacy Skill Application**
1. Cold Check - Before starting, check oil, water, antifreeze, belts & hoses (condition). Check tires for inflation.	1.1 Following sequential procedural directions 1.2 Recognizing defects, i.e., compare/contrast; drawing conclusions 1.3 Knowledge of equipment operating procedures, i.e., cause/effect
2. Running Check - walk around. Turn on engine. Check lights, body, windshield (diesel/air brakes). Check for leaks on ground. Recheck hoses for leaks.	2.1 Following se directions 2.2 Recognizing 2.3 Knowledge 2.4 Predicting o
3. Running Check - inside cabin. Check for debris, fire extinguisher, first aid, flares ("fuses"). Check gauges.	3.1 Knowledge 3.2 Reading gauges, i.e., interpreting increments; knowledge of acceptable ranges 3.3 Following sequential procedural directions 3.4 Recognizing defects or missing equipment, i.e., drawing conclusions; predicting outcomes
4. Fill out Vehicle Check List form. Write summary statements for any problems found or requested repairs.	4.1 Reading skills, i.e., comprehension, word recognition 4.2 Knowledge of technical vocabulary 4.3 Chart reading 4.4 Skimming/scanning for headings 4.5 Entering information accurately onto a form, i.e., translation to format; locating areas on a form 4.6 Writing summary statements
5. Act on results of checks by deciding whether vehicle is safe to load and use for cargo transport or should remain in yard for immediate minor repairs of extensive major repairs. Check with garage to determine availability of service time.	5.1 Predicting outcomes 5.2 Prioritizing actions 5.3 Using multiple sources of information 5.4 Decision making
6. Load equipment and cargo. Check cargo area for compliance with safety regulations.	6.1 Spatial estimation 6.2 Knowledge of safety regulations 6.3 Recognizing hazards, violations, i.e., compare/contrast; cause/effect; drawing conclusions, predicting outcomes 6.4 Following procedural directions

Subsets of skill applications provide division points for planning units of instruction.

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Forms and materials collected during LTAs can also serve as organizers for instructional units. The *Vehicle Check List* form noted in Subtask 4 of the sample LTA is shown in Figure 2.

Notice that the form contains three separate sections: a daily check list at the top, a weekly check list in the center, and statements requiring signatures at the bottom. The first two sections are arranged as charts, displaying information about the vehicle part names, days of the week, and decisions on defects, with minimal directions for entering information. Depending on the results of the checks, summary remarks for corrective actions may also need to be entered onto the charts. The bottom of the chart contains statements that need to be distinguished from one another and the correct statement signed by the driver. These organizing features of the form and their use on the job also suggest skill application clusters that can be broken into units of instruction.

A possible lesson relating to the whole chart could focus on the organization of information on forms, including—

- Three sections
- How sections differ
- What each section contains

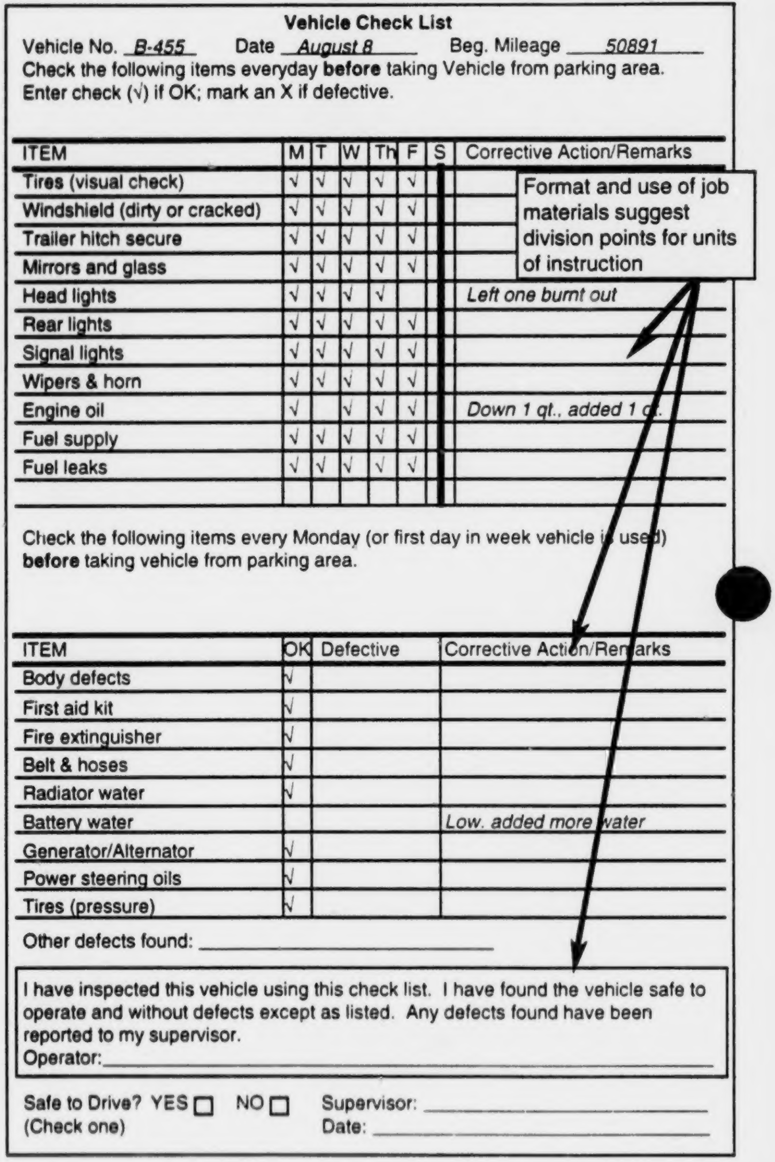
A possible lesson relating to the top and center parts could focus on chart reading, including—

- Skimming and scanning, use of headings
- Technical vocabulary
- Locating information (columns and rows)
- How items are arranged (order in which they are checked)

A possible lesson relating to the entire chart could focus on entering information onto charts and forms, including—

- Locating correct spaces
- Using correct symbols (x or √)

Figure No. 2



Vehicle Check List

Vehicle No. *B-455* Date *August 8* Beg. Mileage *50891*

Check the following items everyday **before** taking Vehicle from parking area.
Enter check (√) if OK; mark an X if defective.

ITEM	M	T	W	Th	F	S	Corrective Action/Remarks
Tires (visual check)	√	√	√	√	√		
Windshield (dirty or cracked)	√	√	√	√	√		
Trailer hitch secure	√	√	√	√	√		
Mirrors and glass	√	√	√	√	√		
Head lights	√	√	√	√			*Left one burnt out*
Rear lights	√	√	√	√	√		
Signal lights	√	√	√	√	√		
Wipers & horn	√	√	√	√	√		
Engine oil	√		√	√	√		*Down 1 qt., added 1 qt.*
Fuel supply	√	√	√	√	√		
Fuel leaks	√	√	√	√	√		

Format and use of job materials suggest division points for units of instruction

Check the following items every Monday (or first day in week vehicle is used) **before** taking vehicle from parking area.

ITEM	OK	Defective	Corrective Action/Remarks
Body defects	√		
First aid kit	√		
Fire extinguisher	√		
Belt & hoses	√		
Radiator water	√		
Battery water			*Low. added more water*
Generator/Alternator	√		
Power steering oils	√		
Tires (pressure)	√		

Other defects found: ____________________

I have inspected this vehicle using this check list. I have found the vehicle safe to operate and without defects except as listed. Any defects found have been reported to my supervisor.
Operator: ____________________

Safe to Drive? YES ☐ NO ☐
(Check one)

Supervisor: ____________________
Date: ____________________

That same lesson could address writing summary statements for the top and center parts, including—

- Paraphrasing, identifying key words, deleting, combining

By integrating the results of your preliminary analyses of LTA skills clusters and job materials, the key elements of instruction and a logical sequence of their presentation to learners can begin to take shape. Prepare a tentative list of selected and sequenced key elements of instructional content; note the collected workplace materials that you want to use in creating exercises and simulation activities. This is the first step in formulating a functional-context curriculum design, or training plan.

Developing Time Blocks for Instruction

The next parameter to consider in shaping instruction is time. The schedule for delivering instruction and the duration of each instructional period will dictate the amount of content able to be delivered in each instructional session. The resulting time blocks become an organizer for further refining decisions about where to break instruction into units.

In developing curriculum, you will need to consider the following:

- Total amount of time to be allotted for course delivery
- Length of each instructional period
- Sequence of instruction in relationship to other activities performed by the learners

For example, if the employer decides to provide 40 hours of instruction for drivers, twice a week for a 10-week period, you will need to think in terms of twenty 2-hour blocks of instructional time. If the employer wants to schedule 32 hours of instruction for 4 hours once a week, you must design instruction to fit eight 4-hour time blocks. Decisions need to be made about *where to combine or separate topics* into timed instructional units and about *how much instructional material can be effectively covered* within the allotted time frames.

The instructional delivery schedule must interface with the skill and task content to be addressed. Topics should not abruptly break off in mid-session due to inappropriate planning for topic delivery time. Design units of instruction to allow for continuity of topic presentation and sufficient practice time for learner mastery.

Begin by estimating the length of time you think is required to conduct an adequate number of instructional activities for each topic. If topics are too long for one session, try to identify natural "break points" or subtopics. It may be necessary to highlight only key concepts within a complex subtask, or to plan to spread a subtask over several periods of instruction.

Look at the sample LTA in Figure 1. As suggested earlier, Subtasks 1 and 2 might be combined because the skill application clusters are similar for each subtask. Subtask 3 requires additional skill applications—the ability to read and interpret gauges. Because these skills add a cluster of subskills to the skills required to perform Subtasks 1 and 2, Subtask 3 should probably become the basis for a separate lesson.

Subtask 4 requires entry of information onto the *Vehicle Check List* form. Using the format of the *Vehicle Check List* as a guide (see Figure 2), the skills content could be split into three separate lessons: organization and location of information on the form; chart reading; and entering information onto the form, including the writing of summary statements.

After considering time frames and content skills and tasks, you can prepare a curriculum instructional unit planning chart—or training plan—like the one shown in Figure 3. The sample is based on an instructional delivery schedule for a 40-hour course of 2-hour sessions, meeting twice each week for 10 weeks.

Figure No. 3

	Sample Curriculum Instructional Unit Planning Chart	
	2-Hour Session #1	2-Hour Session #2
Week 1:	Administer pre-course participant survey Job Simulation Pretest; course overview	**Task A—Vehicle Inspection:** cold and running walk-around checks: following directions, sequencing, recognizing defects
Week 2:	**Running check inside cabin:** reading, interpreting gauges/ranges	**Vehicle Checklist Form:** organization of form information
Week 3:	**Vehicle Checklist Form:** chart reading, technical vocabulary	**Vehicle Checklist Form:** entering information, writing summary statements
Week 4:	**Taking action on inspection results:** decision making, prioritizing, predicting	**Task B—Loading Safely** **Load Cargo; Comply with Safety Regulations:** spatial estimation, following directions
↓	↓	↓
Week 10:	Course review Job Simulation Post-test	Post-course participant surveys End-of-course achievement ceremony

BALANCING INSTRUCTIONAL PRINCIPLES AND REALITIES

As you approach the development of your training plan, you need to keep in mind the educational concepts that should guide instruction in a workplace literacy program. In the words of Philippi[1]—

> It is important to note that it is not the job tasks themselves that are to be taught, but rather the basic skills needed by a worker to accomplish the tasks on a given job. The instructional design of the curriculum should emphasize information processing. The focus of instruction should be on showing employees ***how*** they can perform the processes, on ***learning how to learn***.[2] By breaking processes into procedural steps and by providing direct instruction in thinking strategies, the curriculum enables employees to develop self-questioning and mental activity-monitoring patterns (metacognition) which help them become independent learners who can recognize and correct their own processing errors.

How free you are to incorporate concepts such as metacognition may depend on the realities of the agreement with the entity sponsoring the training. Certain realities over which you may or may not have any control can very much affect how you will select and organize instruction. According to Draper,[3] these different approaches to education can be portrayed as continual:

Learner perceived as dependent on others for direction	Learner perceived as interdependent/ independent, self-directed
Educational program is subject-matter centered	Educational program is task- or problem-centered
Learners enter the program because of external or imposed forces	Learners enter the program voluntarily and participate enthusiastically
Program has been planned by an authority figure or expert, such as a teacher specialist	Program planning is democratized and includes wide participation, including the involvement of the intended learners in the program

Depending on where your reality lies, you will need to mold training accordingly. Ideally, however, any training plans you create will be colored and textured by your commitment to teaching and learning principles critical to the effectiveness of a workplace literacy program for adults. The remainder of this reading provides a closer look at each of these key concepts: learner-centered instruction, participatory education, collaborative learning, holistic approaches, metacognition, and reflective practice.

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1. J. W. Philippi, "Developing Instruction for Workforce Literacy Programs" (Springfield, VA: Performance Plus Literacy Consultants, 1989), p. 6.

2. J. F. Laster, *Toward Excellence in Secondary Vocational Education: Using Cognitive Psychology in Curriculum Planning*, Information Series No. 297 (Columbus, OH: National Center for Research in Vocational Education, The Ohio State University, 1985). (ED 254 656)

3. J. A. Draper, "Understanding Values in Workplace Education," in *Basic Skills for the Workplace*, edited by M. C. Taylor, G. R. Lewe, and J. A. Draper (Toronto, Ontario: Culture Concepts Inc., 1991), pp. 97-98. (ED 333 180)

LEARNER-CENTERED INSTRUCTION

Excerpted from "So We Can Use Our Own Names, and Write the Laws by Which We Live: Educating the New Labor Force" by S. D. Collins, M. Balmuth, and P. Jean
Harvard Educational Review v59/n4 (November 1989): 459-464
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Perceiving the adult worker as a literate person who needs to expand his or her literacy contexts results in a learner-centered approach to teaching. Shirley Edwards, Coordinator of Teamster Local 237's Workplace Literacy Program articulated this philosophy in *Consortium for Worker Education and Institute for Literacy Studies* (1987):

> Student-centeredness implies that in a classroom power is shared, based on common understanding that students, as well as the teacher, bring with them goals and objectives for learning, as well as prior knowledge and experience essential to learning new things. Goals and objectives are then negotiated in the classroom; prior knowledge is invited and validated. Topics to be covered, tasks to be accomplished, and methodology to be used emerge from these negotiations (p. 7).

In the Amalgamated Clothing and Textile Workers' Union (ACTWU) Education Program, student needs and concerns are conveyed by a student delegate committee with members elected from each class, as well as through year-end evaluations of the curriculum and teachers. The delegate system allows dialogue among students and between students and program staff, as well as collective problem solving and policymaking.

The delegate system also serves as a vehicle for the development of student leadership skills. As students work to shape their own community, they learn from and teach each other, developing knowledge and skills that enable them to contribute more effectively to the well-being of their families and communities, and they develop competencies that will take them beyond the limits of the program.

- The program as a whole encourages its directors and teachers to be open to students' needs, ideas, and concerns as they are raised in the classroom or elsewhere.
- In the student-centered classroom, the adult worker sometimes becomes a "teacher" to the teacher.
- Student-centered learning requires flexibility on the part of teachers and program administrators, for curricula often have to be built out of living material—the students' own lives and competencies, as well as their workplace needs and experiences, which vary greatly.
- The program must also have the flexibility to respond to a working population with limited time and irregular hours.
- Flexibility and ingenuity are displayed not only in the scheduling of classes, but also in the format and curriculum. In order to hold the attention of tired workers, a variety of teaching and learning modes must be provided.

LEARNER-CENTERED INSTRUCTION: A POSTSCRIPT

The extent to which instruction is learner-centered can of course vary. If instruction is totally learner-centered, the skills to be covered would be left entirely up to the workers, who could select skills with no relation to the workplace. In that case, the program would be a general literacy program that happens to take place in the workplace.[4] Within a workplace literacy program, however, students could, at a minimum, select from among the tasks/skills identified by others for the program or, for truly active involvement, could develop some topics, materials, and activities on their own.[5]

PARTICIPATORY EDUCATION

Participatory education is—

> a philosophy as well as a set of practices. It starts with a learner-centered approach—a belief that learners should be at the center of literacy instruction. The underlying philosophy aims at giving a voice to learners in the conduct of the program and ensuring that they are not separated from their knowledge or isolated from their communities, the source of their wisdom and strength. Students' knowledge, skills, and experience are valued and respected and provide the foundation upon which further learning is built.
>
> In a traditional program, acquisition of skills (determined by others) is the center of instruction, and the actors are the educator, who knows the skills, and the learners, who "need" to learn the skills. In a participatory program, the learner and his/her characteristics, aspirations, background, and needs are at the center of instruction, and the power is shared between the educator and the learners. Learners don't just have some input; they work collaboratively with the educator to define, create, and maintain the program.
>
> Not only is the power shared, but learning is treated as a reciprocal process. The teacher learns from the learners; the learners learn from the teacher. Everyone—teacher and learner alike—practices basic skills: reading, writing, speaking, listening, calculating, computing, critical thinking. Learners are encouraged to ask questions and to agree or disagree with each other or with the teacher. The teacher models listening and the acceptance of contributions from everyone. Both the physical and the psychological environments convey a message of respect for the learner.[6]

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4. G. L. Lewe, "Understanding the Need for Workplace Literacy Partnerships," in *Basic Skills for the Workplace*, edited by M. C. Taylor, G. R. Lewe, and J. A. Draper (Toronto, Ontario: Culture Concepts, 1991), p. 62. (ED 333 180)

5. P. Jurmo, "Instruction and Management: Where Participatory Theory Is Put into Practice" in *Participatory Literacy Education*, edited by A. Fingeret and P. Jurmo (San Francisco, CA: Jossey-Bass, 1989), pp. 29-30.

6. Adapted from A. Fingeret and P. Jurmo, eds., *Participatory Literacy Education* (San Francisco, CA: Jossey-Bass, 1989), pp. 1, 5, and 67-68.

Participatory programs—

> reject the notion that the worker is an empty piggy bank into which someone else deposits technical information. Or—to use a different metaphor—the worker is not seen as a mechanical appendage of a machine which merely needs some technical fine-tuning. Rather, the worker is seen as a human being with considerable strengths and interests. A participatory workplace program sees these qualities as assets and is structured to provide multiple opportunities for workers to build on their strengths, to enable them to think critically, analyze and solve problems, and communicate clearly.
>
> In practice, we now see this participatory approach in action in a number of workplace literacy settings. Workers in some of these programs work in teams with their instructors to review what goes on in their jobs, to identify problem areas, literacy tasks, and uses of verbal communication they would like to focus on. The emphasis in this kind of needs assessment process is not so much on workers' "deficits" as on their existing abilities, interests, and potential. [Basic skills] activities . . . are [then] built around real-world interests taken from the job.
>
> But, in these programs, the workers don't necessarily focus solely on job-related topics. They might bring in topics from their lives outside the workplace . . . . Including these non-job-related topics is not seen as something superfluous or distracting from job-related goals. Rather, by encouraging workers to focus on a wide range of topics of personal interest, participatory programs reinforce the notion that language is a tool which workers can use to accomplish meaningful, interesting goals.
>
> In this collaborative arrangement, employers and educators are seen as partners who help define what is studied in the program, but they don't dominate the process. In this collaborative process, workers' self-esteem and team spirit are reinforced as they realize they have something to say and have colleagues willing to listen.[7]

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[7] P. Jurmo, "Workplace Education: Beyond the 'Quick Fix,' " paper presented at the statewide conference, Workplace Education: Today & Tomorrow, Worcester, Massachusetts, March 1990, pp. 12-13.

Collaborative Learning in Adult Education
ERIC Digest No. 113 by S. Imel
Columbus, OH: ERIC Clearinghouse on Adult, Career, and
Vocational Education, 1991 (ED 334 469)

One of the most frequently mentioned characteristics of adult education is the fact that it should be collaborative or participatory in nature (Brookfield 1986). Support for collaboration and participation in adult learning is based upon a philosophical approach to adult education emerging from the progressive education movement, one of several movements upon which adult education's philosophical foundations are based (Elias and Merriam 1980).

Although the need for collaboration and participation is emphasized in much of the adult education literature, there is little empirical support for collaborative learning (CL) as the best way to educate adults; there is also little discussion of collaborative learning itself, that is, what it is, how it is implemented, and its strengths and weaknesses. This *ERIC Digest* provides an overview of collaborative learning and describes how the process of collaborative learning can become a part of formal or institutionalized adult education activities (as opposed to autonomous or independent adult learning groups).

What Is Collaborative Learning?

The following form the basis for CL:

- Both facilitators and learners become active participants in the educational process.
- The hierarchy between facilitators and learners is eliminated.
- A sense of community is created.
- Knowledge is created, not transferred.
- Knowledge is considered to be located in the community rather than in the individual (Whipple 1987).

CL has its origins in a number of movements and philosophies, most of which have influenced progressive adult education. It draws heavily from the schools of experiential learning and student-centered learning that are based on the work of the philosopher, Dewey, and the social psychologists, Piaget and Vygotsky. It also uses information from the field of social psychology, particularly small group theory advanced by Lewin. Critical thinking, as a form of education, and problem-centered learning have also contributed to CL (MacGregor 1990, Sheridan 1989).

Collaborative learning assumes that knowledge is socially, rather than individually, constructed by communities of individuals and that the shaping and testing of ideas is a process in which anyone can participate (MacGregor 1990; Novotny, Seifert, and Werner 1991). Furthermore, it stresses the importance of common inquiry in learning, a process through which learners begin to experience knowledge as something that is created rather than something that is transmitted from the facilitator or teacher to the learner (Sheridan 1989).

CL addresses the issue of how authority is distributed and experienced in the learning setting (Bruffee 1987). The preeminent idea behind CL is that learning is significantly enhanced when knowledge that is created and transmitted is shaped by the activities and perspectives of the group, so the facilitator's role as an authority and source of knowledge is reduced (Romer 1985).

How Can Collaborative Learning Be Facilitated?

Adult learning in formal or structured settings, however collaborative, differs from the autonomous learning that adults choose to do because the facilitator usually designs and structures activities to ensure that maximum learning occurs (Bruffee 1987). Thus, it becomes the responsibility of the instructor to create a climate in which CL can occur. Three important elements to foster CL in formal settings are the environment, the role of the facilitator, and the role of the learners. Although the three are intertwined, they are discussed separately.

The Collaborative Learning Environment

CL can take place only in an environment in which participants feel free to exchange ideas and share experiences in order to create knowledge. Therefore, the environment should be unthreatening and democratic, discouraging hostile competition as well as encouraging mutual respect for the ideas and opinions of others (Sheridan 1989).

To create this environment, learners must be willing to listen to and respect different points of view as well as tolerate divergent opinions, engage in discussion and conversation rather than speech making and debate, take on and exercise the authority relinquished by the facilitator, and develop a sense of commitment and responsibility to the group. In turn, facilitators must be willing to surrender complete authority for the learning process and become co-learners with other participants (Bruffee 1987, MacGregor 1990, Romer 1985).

Although in adult learning activities facilitators and learners are jointly responsible for establishing the environment, it is the responsibility of the facilitator to take the lead. Brookfield (1986) has observed that one of the facilitator's most demanding tasks is "to assist in the development of a group culture in which adults can feel free to challenge one another and feel comfortable with being challenged" (p. 14). Without such an environment, CL cannot occur.

The Role of the Facilitator

CL calls for a reframing of the traditional teacher role as the authority and transmitter of knowledge. In CL, the teacher becomes a facilitator and enters into a process of mutual inquiry, relating to students as a knowledgeable co-learner; authority, expertise, power, and control are redefined (MacGregor 1990, Sheridan 1989). For facilitators assuming this role, MacGregor suggests that "particularly challenging is the process of reconciling one's sense of responsibility about course coverage with one's commitment to enabling students to learn on their own" (p. 26). Facilitators must develop methods of sharing their expertise without usurping the attempts of learners to acquire their own.

In addition to taking the lead in establishing an appropriate environment for CL, the facilitator has other responsibilities, two of which are preparing learners for collaborative work and planning for CL. Learners will need to become familiar with the process of CL, develop skills in collaboration and acquire enough content background to permit them to work in a collaborative learning situation. Not all adults are accustomed to collaborative learning situations, and facilitators have a responsibility to describe CL and provide a rationale for its use as well as any training needed to engage in it effectively. Facilitators also need to prepare learners in terms of the content by providing them with a common framework and background from which to begin (MacGregor 1990).

In planning for CL, the facilitator must consider where and in how much of the learning activity collaboration is appropriate; establish and communicate clear objectives; use suitable techniques; prepare content materials, including developing meaningful questions or problems for group work; structure groups; and provide a clear sense of expected outcomes of group work (MacGregor 1990, Sheridan 1989).

The Role of Learners

CL also calls for significant role shifts for the student: from listener, observer, and note taker to problem solver, contributor, and discussant; from low or moderate to high expectations for class preparation; from a private to a public classroom presence; from attendance dictated by personal choice to that having to do with the expectations of the collaborative learning group; from competition to collaboration with peers; from responsibilities associated with learning independently to those associated with learning interdependently; and from viewing teachers and texts as the sole sources of authority and knowledge to viewing peers, oneself, and the thinking of the group as additional, important sources of authority and knowledge (MacGregor 1990, p. 25). Facilitators can prepare learners for these shifts in their roles, including the need to assume greater responsibility for their own learning.

What Issues Are Affiliated with Collaborative Learning?

CL is not without problems and issues. Those most frequently mentioned in the literature include cultural biases toward competition and individualism that militate against collaboration, the traditional class structure that frequently does not allow sufficient time for true collaboration to occur or for group members to establish trust and a sense of group security, the difficulty in providing feedback that accommodates the needs of both the group and the individual, the reluctance of learners to accept their peers as legitimate sources of knowledge, the inability of facilitators to relinquish their traditional role, and the development of appropriate and meaningful collaborative learning tasks (Bruffee 1987; MacGregor 1990; McKinley 1983; Novotny, Seifert, and Werner 1991; Sheridan 1989). Because they did not give sufficient time and attention to this last issue, some adult educators have been accused of providing "warm and fuzzy" learning experiences that did not necessarily result in any real learning (Sheridan 1989).

What Are the Key Benefits of Collaborative Learning?

Collaborative learning—

- provides an environment for democratic planning, decision making, and risk taking
- allows participants to acquire insights into the potential and power of groups as well as develop their independence as learners
- helps individuals develop better judgment through the exposure and resolution of previously unshared biases
- enables adults to draw on their previous experiences by tapping their reservoir of accumulated wisdom and knowledge (Brookfield 1986; Bruffee 1987; Martin 1990; Novotny, Seifert, and Werner 1991)

As yet, there is little empirical evidence on the effectiveness of CL as it relates to learning outcomes in adult education. However, research at the primary and secondary levels reveals that students learn better through noncompetitive, collaborative group work than in classrooms that are highly individualized and competitive (Bruffee 1987). Whether or not this is true with adults is still largely untested.

Because of the lack of empirical support for CL, it is unclear whether it should be adopted more widely in adult education. As an approach, CL represents a philosophical perspective about the appropriate goals and methods of education. Adult educators choosing to employ CL should be fully aware of the related issues and problems as well as the careful planning and preparation needed to implement it effectively.

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HOLISTIC APPROACHES

Holistic approaches can be most easily defined by contrasting them to linear approaches. In the linear approach to instruction, content is organized according to its inherent logic. This is often called the building-block approach. Learning is broken down into steps, and the incremental—linear—steps are taught one by one in isolation from the ultimate task to be performed. Thus, when you were in school, your English teacher undoubtedly covered, in separate lessons, writing, speaking, grammar, spelling, and literature. And never the twain did meet. Consider the experience described by one teacher who started out using this approach:

> As a first-year English teacher, I taught objective and subjective cases of pronouns using the grammar book and its exercises. I taught and taught, explained and explained. Not everyone passed the first quiz. Such a simple concept, so beautifully and thoroughly taught. So I said, "We will not continue on until everyone has passed a quiz on this simple concept." And we didn't. When at last all students had passed the quiz, I was overjoyed at our success. Imagine my surprise when, after thoroughly beating that concept into the ground, I discovered that the "mastered" concept made no transfer into students' speech or writing.

To counteract this problem, we have the holistic approach in which a whole task—a natural task—is the focus of instruction, with the skills required for its performance taught in relation to the whole task. Students learn to write by writing, for example, and grammar is activated as needed to improve specific problems in the writing.

In a workplace literacy program, a problem situation from the workplace could first be described by the learners (oral communication), then written down by the instructor and, perhaps, copied by the learners (written communication). The written scenario could then be referred to as students attempt to solve the problem (critical-thinking, problem-solving, decision-making skills). Measurements and calculations could be involved in the solution of the problem (math skills). The activity could conclude with students summarizing their solutions (oral or written communication). This is holistic; critical thinking skills are integrated with other language processes; reading, writing, speaking, and listening are handled just as they occur in the real world—as interrelated skills used to solve problems.

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METACOGNITION: MAKING THINKING VISIBLE

According to one source—

> One of the more sophisticated approaches that illustrate active processing is what Sam Crowell calls "metacognitive" teaching. He either models or includes students in a process and then stops to ask, "What did we do? What did you experience?" The objective is to create the exact circumstances of a concept that is being taught . . . to reflect on what happened and on the process as an experience. In this way, provided there is a general atmosphere of relaxed alertness and trust, students move to deeper levels of understanding because the experience includes dealing with the impact of the process on themselves, including emotional involvement (e.g., asking teachers to explore the values implicit in the choices they make in designing a lesson . . . how their values interact with the process). Students learn the process not as an abstract concept but in relation to their own thinking and behavior.
>
> Metacognition—thinking about the way that we think, feel, and act—helps us to learn in much more depth because we begin to recognize and capitalize on personal strengths while improving or allowing for weaknesses. We are also better able to appreciate what is really important to us, and so access our intrinsic motivation. Hence, active processing becomes a vehicle for increasing relaxed alertness.
>
> Active processing is not just a stage in a lesson. . . . It is a matter of constantly "working" and "kneading" the ongoing experience that students have.[8]

According to another source—

> A suggested lesson format, using the technique of modeling . . . and offering the student explicit instruction in metacognitive strategies follows:
>
> 1. The teacher should provide one or two selections from job materials that can be used to illustrate the desired reading process. He or she should demonstrate the process to the students by thinking each step of the entire procedure aloud as it is applied to the selection, while students follow along with their own copies of the materials. Every step of the reading task should be expressed; it should not be assumed that the students will automatically progress from one step to the other.
> 2. The teacher should repeat the same procedure with one or more additional selections that illustrate the process, allowing the students to take the responsibility for contributing information to different steps each time.
> 3. After students demonstrate the ability to successfully complete the entire process and seem comfortable with it, the teacher should allow them to implement the process independently on a follow-up selection. Immediate feed-back should be provided.
> 4. At least three additional selections should be available for students to use to practice the job reading task until they have mastered it.[9]

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[8] Excerpted from R. N. Caine and G. Caine, *Making Connections: Teaching and the Human Brain* (Alexandria, VA: Association for Supervision and Curriculum Development, 1991), pp. 148, 151, and 169-170. (ED 335 141)

[9] J. W. Philippi, "Matching Literacy to Job Training: Some Applications from Military Programs," *Journal of Reading* v31/n7 (April 1988): 663-664.

REFLECTIVE PRACTICE IN ADULT EDUCATION
ERIC Digest No. 122 by S. Imel
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Vocational Education, 1992 (ED 346 319)

Increasingly, the term *reflective practice* is appearing in the vocabulary of adult education. Based on the notion that skills cannot be acquired in isolation from context, the reflective practice movement has emerged as a reaction to technical and competency based strategies common in the 1970s (Rose 1992). This *ERIC Digest* examines reflective practice in adult education. First, the concept is defined, including its strengths and weaknesses. Then, the relevance of reflective practice to adult education is discussed. Suggested strategies for becoming more reflective in practice conclude the digest.

Reflective Practice Defined and Described

Reflective practice is a mode that integrates or links thought and action with reflection. It involves thinking about and critically analyzing one's actions with the goal of improving one's professional practice. Engaging in reflective practice requires individuals to assume the perspective of an external observer in order to identify the assumptions and feelings underlying their practice and then to speculate about how these assumptions and feelings affect practice (Kottkamp 1990, Osterman 1990, Peters 1991). According to Peters (ibid., p. 95), "[it] is a special kind of practice . . . [that] involves a systematic inquiry into the practice itself."

Educators have become familiar with the concept of reflective practice through Donald Schön's (1983, 1988) writings about reflective practitioners. Schön's work has an historical foundation in a tradition of learning supported by Dewey, Lewin, and Piaget, each of whom advocated that learning is dependent upon the integration of experience with reflection and of theory with practice. Although each argued that experience is the basis for learning, they also maintained that learning cannot take place without reflection. In reflective practice, ***reflection*** is the essential part of the learning process because it results in making sense of or extracting meaning from the experience (Osterman 1990).

According to Schön (1988), the stage is set for reflection when "knowing-in-action"—the sort of knowledge that professionals come to depend on to perform their work spontaneously—produces an unexpected outcome or surprise. This surprise can lead to one of two kinds of reflection: reflection on action, which occurs either following or by interrupting the activity, or reflection in action, which occurs during (without interrupting) the activity by thinking about how to reshape the activity while it is underway.

Kottkamp (1990) uses the terms "offline" and "online" to distinguish between reflection-on-action and reflection-in-action. Reflection-on-action takes place after the activity (i.e., offline), when full attention can be given to analysis without the necessity for immediate action and when there is opportunity for the professional to receive assistance from others in analyzing the event. Reflection-in-action, which occurs during the event, may be more effective in improving practice. It results in online experiments to adjust and improve actions even though it requires simultaneous attention to the behavior and the analysis as if from an external perspective. Schön (1983) states that when reflecting in action, a professional becomes a researcher in the context of practice, freed from established theory and techniques and able to construct a new theory to fit the unique situation.

Before professionals' theories or ideas about practice can be changed, they must be identified. However, in skillful knowing-in-action much of the "skillful action reveals a 'knowing more than we can say,'" a tacit knowledge (Schön 1983, p. 51). In other words, professionals are not able to describe what they do to accomplish an activity. However, Osterman (1990) maintains that an important part of reflective practice is developing the ability to articulate that tacit knowledge in order to share professional skills and enhance the body of professional knowledge.

The values, assumptions, and strategies supporting theories and ideas about practice need to be examined. If this clarification does not occur, professionals may find themselves in the position of espousing one theory but using another in practice, that is, their actions are not consistent with their intent. In reflective practice, professionals can expose their actions to critical assessment to discover the values and assumptions underlying their practice. As professionals become more aware of their theories-in-use, they become more conscious of the contradictions between what they do and what they hope to do (Osterman 1990, Schön 1988).

Reflective practice has both advantages and disadvantages. It can positively affect professional growth and development by leading to greater self-awareness, to the development of new knowledge about professional practice, and to a broader understanding of the problems that confront practitioners (Osterman 1990). However, it is a time-consuming process and it may involve personal risk because the questioning of practice requires that practitioners be open to an examination of beliefs, values, and feelings about which there may be great sensitivity (Peters 1991, Rose 1992).

Engaging in reflective practice requires both knowledge of practice and awareness of professional and personal philosophy. Reflection without an understanding of the rules or techniques that constitute good practice may lead to a repetition of mistakes, whereas reflection without philosophical awareness can lead to a preoccupation with technique (Lasley 1989). Schön (1988) suggests that professionals learn to reflect in action by first learning to recognize and apply standard practice rules and techniques, then to reason from general rules to problematic cases characteristic of the profession, and only then to develop and test new forms of understanding and action when familiar patterns of doing things fail.

The Role of Reflective Practice in Adult Education

In adult education, as in most other professions, there are many prescriptions for effective practice, and professionals are perceived as having specialized expertise that they apply to problems in well-defined practice situations. In reality, however, adult education programs take place in settings that are characterized by a great deal of ambiguity, complexity, variety, and conflicting values that make unique demands on the adult educator's skills and knowledge. As a result, adult educators are constantly making choices about the nature of practice problems and how to solve them (Cervero 1988, 1989).

Cervero (1988) maintains that the essence of effective practice in adult education is the ability to reflect-in-action. Adult educators must be able to change ill-defined practice situations into those in which they are more certain about the most appropriate course of action to pursue. They must engage in reflective practice and use their "repertoire of past experiences . . . to make sense of the current situation" (p. 157), conducting spontaneous experiments in order to decide on appropriate courses of action.

Reflective practice in adult education can also be a tool for revealing discrepancies between espoused theories (what we say we do) and theories-in-use (what we actually do). For example, the andragogical model with its four underlying assumptions has been widely adopted by adult educators with one result being the assumption that teaching adults should differ from teaching children and adolescents. However, a summary (Imel 1989) of research investigating these differences revealed that although teachers perceive adults as being different, these perceptions do not automatically translate into differences in approaches to teaching.

Strategies for Reflective Practice

Engaging in reflective practice takes time and effort but the rewards can be great. The following list summarizes reflective practice processes (Roth 1989):

- Questioning what, why, and how one does things and asking what, why, and how others do things
- Seeking alternatives
- Keeping an open mind
- Comparing and contrasting
- Seeking the framework, theoretical basis, and/or underlying rationale
- Viewing from various perspectives
- Asking "what if . . . ?"

- Asking for others' ideas and viewpoints
- Using prescriptive models only when adapted to the situation
- Considering consequences
- Hypothesizing
- Synthesizing and testing
- Seeking, identifying, and resolving problems

Fortunately, there are a number of resources available for those interested in developing habits of reflective practice. For example, Peters (1991, pp. 91-95) describes a process called DATA that consists of four steps: describe, analyze, theorize, and act. First, the problem, task, or incident representing some critical aspect of practice that the practitioner desires to change is described. For example, a teacher may wish to become less directive and more collaborative in her instructional processes. In the DATA model, she would identify the context in which instruction takes place, how she feels about the directive approach, and reasons for changing it.

Next, through analysis, she would identify factors that contribute to her current directive approach. An important part of this stage is to identify the assumptions that support this approach and bring to light underlying beliefs, rules, and motives governing teaching and learning. Here, the teacher can uncover the theory behind her directive approach.

The third step of the DATA process involves theorizing about alternative ways of approaching teaching by taking the theory derived from the previous step and developing it into a new one. In this step, the teacher is developing an espoused theory to govern her new, collaborative approach.

Finally, she will act and try out her new theory. The goal of this step will be to minimize any discrepancies between the espoused theory and the theory in use, but this will only occur through further thought and reflection.

Additional sources that contain strategies to help adult educators become more reflective in practice are Brookfield's (1988) work on critical thinking and Mezirow's (1990) on fostering critical reflectivity. Although more general, Kottkamp (1990) also contains strategies for "sparking, facilitating, and sustaining reflection at various levels and preparatory stages of professional practice" (p. 182). These resources can help adult educators approach their practice in a reflective manner and deal more effectively with a field characterized by uncertainty, complexity, and variety.

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Reflection on Reading 2

- On pp. 26-33 are an inventory for identifying your philosophy of adult education, scoring instructions, and a chart that summarizes various philosophical foundations of adult education: liberal, behaviorist, progressive, humanistic, and radical. Note that there is no "right" or "wrong" philosophy. The inventory is designed only to give you information about your own beliefs, not to make judgments about those beliefs. It gives you a basis for thinking about how your beliefs influence your actions as an adult educator.

  Complete and score the inventory, and then review the chart to determine which position best describes your present philosophy? Does one position fit fairly closely, or does your philosophy include bits and pieces from more than one position? If the latter, what name could you devise to accurately convey the nature of your combined approach?

- Imagine yourself employing each of the concepts presented in the reading: competency-based education, metacognition, reflective practice, collaborative learning, holistic curriculum approach, student-centered instruction, etc.? Which ones make you uncomfortable? Why? Do you feel you need more information, or do you feel you lack the necessary skill, or are you unable to accept the validity of the concept? Discuss your source of discomfort with a peer (e.g., fellow instructor, family member, or friend). Express your thought processes aloud and reflect on your concerns. In short, use some of the concepts to reflect on the concepts.

- If a training plan is simply a profile of the broad instruction to be provided and the time frame for that instruction, why should its development be preceded by thoughts about educational philosophy?

Philosophy of Adult Education Inventory

Directions: Read each of the following belief statements and indicate the extent to which you agree using the 7-point scale, in which 1 = strongly disagree (SD), 4 = neutral (N), and 7 = strongly agree (SA).

1. In planning an educational activity, I am most likely to—

	SD			N			SA	
• identify, in conjunction with learners, significant social and political issues and plan learning activities around them	1	2	3	4	5	6	7	(e)
• clearly identify the results I want and construct a program that will almost run itself	1	2	3	4	5	6	7	(b)
• begin with a lesson plan that organizes what I plan to teach, when and how	1	2	3	4	5	6	7	(a)
• assess learners' needs and develop valid learning activities based on those needs	1	2	3	4	5	6	7	(c)
• consider the areas of greatest interest to the learners and plan to deal with them regardless of what they may be	1	2	3	4	5	6	7	(d)

2. People learn best—

	SD			N			SA	
• when the new knowledge is presented from a problem-solving approach	1	2	3	4	5	6	7	(h)
• when the learning activity provides for practice and repetition	1	2	3	4	5	6	7	(g)
• through dialog with other learners and a group coordinator	1	2	3	4	5	6	7	(j)
• when they are free to explore, without the constraints of a "system"	1	2	3	4	5	6	7	(i)
• from an "expert" who knows what he or she is talking about	1	2	3	4	5	6	7	(f)

3. The primary purpose of adult education is—

	SD			N			SA	
• to facilitate personal development on the part of the learner	1	2	3	4	5	6	7	(d)
• to increase learners' awareness of the need for social change and to enable them to effect such change	1	2	3	4	5	6	7	(e)
• to develop conceptual and theoretical understanding	1	2	3	4	5	6	7	(a)
• to establish the learners' capacity to solve individual and societal problems	1	2	3	4	5	6	7	(c)
• to develop the learners' competency and mastery of specific skills	1	2	3	4	5	6	7	(b)

	SD			N			SA	
4. Most of what people know—								
• is a result of consciously pursuing their goals, solving problems as they go	1	2	3	4	5	6	7	(h)
• they have learned through critical thinking focused on important social and political issues	1	2	3	4	5	6	7	(j)
• they have learned through a trail-and-feedback process	1	2	3	4	5	6	7	(g)
• they have gained through self-discovery rather than some "teaching" process	1	2	3	4	5	6	7	(i)
• they have acquired through a systematic educational process	1	2	3	4	5	6	7	(f)
5. Decisions about what to include in an educational activity—								
• should be made mostly by the learner in consultation with a facilitator	1	2	3	4	5	6	7	(d)
• should be based on what learners know and what the teacher believes they should know at the end of the activity	1	2	3	4	5	6	7	(b)
• should be based on a consideration of key social and cultural situations	1	2	3	4	5	6	7	(e)
• should be based on a consideration of the learners' needs, interests, and problems	1	2	3	4	5	6	7	(c)
• should be based on a careful analysis by the teacher of the material to be covered and the concepts to be taught	1	2	3	4	5	6	7	(a)
6. Good adult educators start planning instruction—								
• by considering the end behaviors they are looking for and the most efficient ways of producing them in learners	1	2	3	4	5	6	7	(g)
• by identifying problems that can be solved as result of the instruction	1	2	3	4	5	6	7	(h)
• by clarifying the concepts or theoretical principles to be taught	1	2	3	4	5	6	7	(f)
• by clarifying key social and political issues that affect the lives of the learners	1	2	3	4	5	6	7	(j)
• by asking learners to identify what they want to learn and how they want to learn it	1	2	3	4	5	6	7	(i)

7. As an adult educator, I am most successful in situations—

	SD			N			SA	
• that are unstructured and flexible enough to follow learners' interests	1	2	3	4	5	6	7	(d)
• that are fairly structured, with clear learning objectives and built-in feedback to the learners	1	2	3	4	5	6	7	(b)
• where I can focus on practical skills and knowledge that can be put to use in solving problems	1	2	3	4	5	6	7	(c)
• where the scope of the new material is fairly clear and the subject matter is logically organized	1	2	3	4	5	6	7	(a)
• where the learners have some awareness of social and political issues and are willing to explore the impact of such issues on their daily lives	1	2	3	4	5	6	7	(e)

8. In planning an educational activity, I try to create—

• the real world—problems and all—and to develop learners' capacities for dealing with it	1	2	3	4	5	6	7	(h)
• a setting in which learners are encouraged to examine their beliefs and values and to raise critical questions	1	2	3	4	5	6	7	(j)
• a controlled environment that attracts and holds the learners, moving them systematically towards the objective(s)	1	2	3	4	5	6	7	(g)
• a clear outline of the content and the concepts to be taught	1	2	3	4	5	6	7	(f)
• a supportive climate that facilitates self-discovery and interaction	1	2	3	4	5	6	7	(i)

9. The learners' feelings during the learning process—

• must be brought to the surface in order for learners to become truly involved in their learning	1	2	3	4	5	6	7	(e)
• provide energy that can be focused on problems or questions	1	2	3	4	5	6	7	(c)
• will probably have a great deal to do with the way they approach their learning	1	2	3	4	5	6	7	(d)
• are used by the skillful adult educator to accomplish the learning objective(s)	1	2	3	4	5	6	7	(b)
• may get in the way of teaching by diverting the learners' attention	1	2	3	4	5	6	7	(a)

10. The teaching methods I use—

	SD			N			SA	
• focus on problem-solving and present real challenges to the learner	1	2	3	4	5	6	7	(h)
• emphasize practice and feedback to the learner	1	2	3	4	5	6	7	(g)
• are mostly nondirective, encouraging the learner to take responsibility for his/her own learning	1	2	3	4	5	6	7	(i)
• involve learners in dialog and critical examination of controversial issues	1	2	3	4	5	6	7	(j)
• are determined primarily by the subject or content to be covered	1	2	3	4	5	6	7	(f)

11. When learners are uninterested in a subject, it is because—

• they do not realize how serious the consequences of not understanding or learning the subject may be	1	2	3	4	5	6	7	(e)
• they do not see any benefit for their daily lives	1	2	3	4	5	6	7	(c)
• the teacher does not know enough about the subject or is unable to make it interesting to the learner	1	2	3	4	5	6	7	(a)
• they are not getting adequate feedback during the learning process	1	2	3	4	5	6	7	(b)
• they are not ready to learn it or it is not a high priority for them personally	1	2	3	4	5	6	7	(d)

12. Differences among adult learners—

• are relatively unimportant as long as the learners gain a common base of understanding through the learning experience	1	2	3	4	5	6	7	(f)
• enable them to learn best on their own time and in their own way	1	2	3	4	5	6	7	(i)
• are primarily due to differences in their life experiences and will usually lead them to make different applications of new knowledge and skills to their own situations	1	2	3	4	5	6	7	(h)
• arise from their particular cultural and social situations and can be minimized as they recognize common needs and problems	1	2	3	4	5	6	7	(j)
• will not interfere with their learning if each learner is given adequate opportunity for practice and reinforcement	1	2	3	4	5	6	7	(g)

	SD			N			SA	
13. Evaluation of learning outcomes—								
• is not of great importance and may not be possible, because the impact of learning may not be evident until much later	1	2	3	4	5	6	7	(e)
• should be built into the system so that learners will continually receive feedback and can adjust their performance accordingly	1	2	3	4	5	6	7	(b)
• is best done by the learners themselves, for their own purposes	1	2	3	4	5	6	7	(d)
• lets me know how much learners have increased their conceptual understanding of new material	1	2	3	4	5	6	7	(a)
• is best accomplished when the learner encounters a problem—either in the learning setting or the real world—and successfully resolves it	1	2	3	4	5	6	7	(c)
14. My primary role as a teacher of adults is to—								
• guide learners through learning activities with well-directed feedback	1	2	3	4	5	6	7	(g)
• systematically lead learners step by step in acquiring new information and understanding underlying theories and concepts	1	2	3	4	5	6	7	(f)
• help learners identify and learn to solve problems	1	2	3	4	5	6	7	(h)
• increase learners' awareness of environmental and social issues and help them learn how to have an impact on these situations	1	2	3	4	5	6	7	(j)
• facilitate, but not to direct, learning activities	1	2	3	4	5	6	7	(i)
15. In the end, if learners have not learned what was taught—								
• the teacher has not actually taught	1	2	3	4	5	6	7	(a)
• they need to repeat the experience, or a portion of it	1	2	3	4	5	6	7	(b)
• they may have learned something else that they consider just as interesting or useful	1	2	3	4	5	6	7	(d)
• they do not recognize how learning will enable them to significantly influence society	1	2	3	4	5	6	7	(e)
• it is probably because they are unable to make practical application of new knowledge to problems in their daily lives	1	2	3	4	5	6	7	(c)

Instructions for Scoring the Inventory

After completing the inventory, go back to your responses and note the small letter in parentheses to the far right of each rating scale. These are code letters for scoring the inventory:

Transfer each of your numbers on the rating scale to the matrix below. For example:

- For Item 1, if you circled a *5* for option *(e)*, write the number *5* in the box for *1(e)*.
- Item 1 has **five** different response: e, b, a, c, d. Record **all five** of your responses for Item 1.
- Then repeat this process for Items 2-15.

When you finish, there will be numbers in **every other square** in the matrix (like a checkerboard).

	a	b	c	d	e	f	g	h	i	j
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
Subtotal										

Now add all the numbers by columns, from top to bottom, so that you have **ten** separate subtotals (none higher than 56, none lower than 8). For your final score, add the subtotals from the columns as shown in the box at the top of the next page.

Final Score

a + f = L__________

b + g = B__________

c + h = P__________

d + i = H__________

e + j = R__________

Note: Final score should be no higher than 15.

What Your Score Means

Each of your scores reflects a particular philosophy of adult education:

L = Liberal Adult Education

B = Behaviorist Adult Education

P = Progressive Adult Education

H = Humanistic Adult Education

R = Radical Adult Education

The summary chart on the next page provides a synopsis of each of these philosophies. You may want to write your score for each philosophy above the column that describes it. Your **highest** score reflects the philosophy that is **closest** to your own beliefs; your **lowest** score reflects a philosophy that is **least** like yours.

For example, a score of 95-105 indicates a strong agreement with a given philosophy; a score of 15-25 indicates a strong disagreement with a given philosophy. If your score is between 55 and 65, it probably means that you neither agree nor disagree strongly with a particular philosophy.

Summary Chart of Philosophical Foundation of Adult Education

	Liberal	Behaviorist	Progressive	Humanistic	Radical
Purpose	To develop intellectual powers of the mind To make a person literate in the broadest sense—intellectually, morally, spiritually, aesthetically	To bring about behavior that will ensure the survival of the human species, societies, and individuals To promote behavioral change	To transmit culture and societal structure To promote social change To give learner practical knowledge, problem-solving skills	To enhance personal growth and development, self-actualization	Through education, to bring about radical social, political, and economic change in society
Learner	"Renaissance person" Cultured Always a learner Seeks knowledge rather than just information, conceptual, theoretical understanding	Learner takes an active role in learning, practicing new behavior and receiving feedback Strong environmental influence	Learner needs, interests, and experience are key elements in learning People have unlimited potential to be developed through education	Learner is highly motivated and self-directed Assumes responsibility for learning	Equality with teacher in learning process Personal autonomy enhanced People create history and culture by combining reflection with action
Teacher	The "expert" Transmitter of knowledge Authoritative Clearly directs learning process	Manager Controller Predicts and directs learning outcomes	Organizer Guides learning through experiences that are educative Stimulates, instigates, and evaluates learning process	Facilitator Helper Partner Promotes but does not direct learning	Coordinator Suggests but does not determine direction for learning Equality between teacher and learner
Key Words/ Concepts	Liberal learning Learning for its own sake Rational, intellectual education General education Traditional knowledge Classical humanism	Stimulus-response Behavior modification Competency-based Mastery learning Behavioral objectives Trial and error Feedback Reinforcement	Problem solving Experience-based education Democracy Lifelong learning Pragmatic knowledge Social responsibility Needs assessment	Experiential learning Freedom Individuality Self-directed Cooperation Authenticity Ambiguity Feelings	Consciousness-raising Praxis, noncompulsory learning Autonomy Critical thinking Social action Deinstitutionalization Literacy training
Methods	Dialectic Lecture Study groups Critical reading and discussion Contemplation	Programmed instruction Contract learning Teaching machine Computer-assisted instruction Practice and reinforcement	Problem solving Scientific method Activity method Experimental method Project method Inductive method	Experiential Group discussion, group tasks Team teaching Self-directed learning Individualized learning Discovery method	Dialogue Problem-posing Maximum interaction Discussion Groups
People/ Practices	Socrates, Aristotle, Adler, Kallen, Van Doren, Houle Great Books, Lyceum, Chautauqua, Elderhostel, Center for the Study of Liberal Education	Skinner, Thorndike, Watson, Tyler APL (Adult Performance Level), competency-based teacher education, behavior modification programs	Spencer, Dewey, Sheats, Bergevin, Lindeman, Bonna, Blakely Citizenship education, ABE, ESL, community schools, cooperative extension, schools without walls	Rogers, Maslow, Knowles, May, Tough, McKenzie Encounter groups, group dynamics, self-directed learning projects, human relations training, Esalen	Brameld, Kolt, Kozol, Freire, Goodman, Illich, Ohliger Freedom Schools, Freire's literacy training, free schools

SOURCE: Descriptions excerpted from J. Elias and S. Merrian, *Philosophical Foundations of Adult Education* (Krieger, 1980). Prepared by M. Denis as it appears in OISE Department of Education's *Outline of Adult Education*, 1989.

Development of Performance and Enabling Objectives

In a performance/competency-based training model, the ultimate test of training success is whether trainees can perform the tasks of the job. Likewise, in a workplace literacy program using a functional-context approach, application of literacy skills in the performance of job tasks is the goal. The performance objectives used in a workplace literacy program are learning objectives that specify, in instructional terms, the work tasks learners are to perform, the work context in which performance is to occur, and the performance outcomes (or standards). The enabling objectives—or enablers—for a workplace literacy program address the task-related basic skills students are to develop (e.g., *Calculate the mean and standard deviation of market data; Write simple directions for product assembly*)—skills essential to successful performance of the job tasks.

Performance and enabling objectives are a legacy of the behaviorist approach to education in which learning is broken down into its discrete parts, and rewards and punishments are used to teach (i.e., change the behavior of) the learners. As such, they are the target of some criticism by those who would seek to make instruction more learner-centered and collaborative and brain-based and open-ended.

As usual in this world, the baby need not go out with the bath water. Objectives give structure to the instructional program, allowing both you and the learner to have some idea of where you are going (which also makes it easier to assess whether you arrive). The way you arrive at the objectives and the way in which you deliver instruction on the way to meeting them, however, need not be behavioristic. The job tasks to be performed—the objectives to be met—can be arrived at with input from the learners. Within the functional context of those job tasks, instruction can be highly learner-centered and collaborative, with a focus on higher-level skills involved such as problem solving, decision making, and critical thinking.

Specific Benefits

As mentioned above, objectives provide learners with important information about what is expected of them in the program—what they must accomplish, under what conditions and according to what criteria, in order to complete the program successfully. There is considerable evidence to indicate that when learners know the objectives in advance, learning is increased.

The objectives also serve as an advance organizer for the learners. Having a clear idea of what is expected of them gives them a target to shoot for and a means for organizing their efforts so as to reach that target logically and efficiently. For adult learners, who often function in many roles (parent, spouse, employee, student), being able to meet educational goals as efficiently as possible may be important.

Finally, objectives give the learners a yardstick for gauging their progress and the level of achievement they have reached. Thus, learners get positive feedback regarding their accomplishments and useful feedback about what remains to be accomplished, both qualitatively and quantitatively.

For you, the instructor, objectives are also an advance organizer. They provide the necessary blueprint for the instructional process for which you are responsible. These objectives define the tasks and related knowledge and abilities necessary for job success. This helps you ensure that you stress literacy skill development in relation to the occupational requirements—the job context.

The use of objectives also helps you ensure that instruction is delivered in an organized fashion. The lesson plans you will use to guide your instructional efforts will be developed using objectives as a baseline. Each lesson component will be selected in accordance with the nature and specifications of the objectives. Lesson plan components thus derive from, are consonant with, and lead to the achievement of the objectives.

Finally, the yardstick that objectives provide helps you, as well as the learners, to measure learner achievement and progress. When achievement and progress are not satisfactory, you have a basis for modifying instruction to correct the situation.

In terms of the workplace literacy program, clearly stated performance and enabling objectives identify for the business or industry those skills that program completers can be expected to possess and what tasks they should be able to perform competently.

In addition, the development of these objectives establishes a base for program evaluation. Questions about whether learners will be able to meet the needs of the job can be addressed through the careful examination of how well they achieve the objectives.

Components of the Objective

Whether your role in developing performance and enabling objectives is easy or hard will depend on the quality of the results of the job and literacy task analyses. Consider the following performance objective for a job:

Work context	Given X number of parts and packaging material
Work task	Pack X number of parts
Performance outcomes	Parts will be quickly packaged, not damaged, and in proper alignment at plant.

Or this enabling objective covering a task-related basic skill:

Work context	Given a series of Ohm's law problems that outline any two of the values for current, voltage, or resistance
Work task	Calculate the missing values
Performance outcomes	Performance requires 100% accuracy on at least 80% of the problems

Where did all that information come from?

The *work task* should come directly from the job or literacy task analysis profile. It's that simple. The other information may come from a number of different sources:

- If the analysts performed both job and *task* analyses (JTA), part of the task analysis process is to identify, for each task, the standards governing performance on the job. For example, JTA was performed for the occupation of secretary, and one of the tasks analyzed was *Prepare a business letter*. On the left of the form, the steps in the task were listed. Next to each step was listed the standard governing performance. According to this task analysis form, we could easily derive the information that the performance outcomes could be stated as follows: *The correct format, letterhead, and type style for a business letter were selected, the letter was typed within a reasonable time frame, and the completed letter was error-free.* Conditions governing performance may also be identified during the task analysis.
- If the analysts observed performance of tasks on the job and documented what they saw in any detail, these notes may provide some of the information you need.
- If possible, you could observe task performance on the job. This is an excellent way of not only providing you with content for developing objectives and instructional plans but also preparing you to provide instruction in a functional context.
- Finally, learners are an excellent source of this information, and asking them to provide it can have many benefits. First, having input can give learners a sense of ownership concerning the objectives they will be expected to achieve. Second, oral communication is one of the literacy skills your program is undoubtedly focusing on; here is an opportunity for learners to exercise that skill in the context of their job and its requirements. Finally, if you want learning in your classroom to be collaborative, here is a chance for the learners to serve in the expert role while you function as a learner.

Need for Preciseness and Practicality

Your performance objectives need to be stated in precise terms. If the analyses have been correctly done, you should already have precisely stated task statements at your disposal.

Work task. The task statement should include only one verb, and that verb should describe an action that is observable and measurable. Furthermore, the task statement should start with that verb. Starting each statement with a phrase such as *the trainee will be able to* is unnecessary; that notion is implicit in the shorter statement.

Work context. This part of the objective should outline the circumstances under which the learner is to perform the work task. Conditions may be aiding (things given or provided) or limiting (things withheld). The things provided or withheld may be equipment and tools, materials and aids or references, equipment status or problem situation, plant operating mode, performance setting, safety considerations, or a combination.

What does performance setting mean? It is used to indicate to the learner that the performance will be in a setting other than the one in which the task is performed; for example: *Under simulated conditions.* Requiring performance under actual job conditions provides the surest evidence of job-readiness. Thus, conditions should require performance under situations as close to job conditions as possible. When this is not possible, practical, or safe, another performance setting should be specified.

It is possible in this component to name every nut and bolt required for performance. However, providing such detail can produce a long, difficult-to-read objective and is generally unnecessary. Instead, a statement such as the following can provide the same information far more succinctly: *Given all needed materials.*

Performance outcomes. The criteria (or standards) describe the minimum level of mastery or degree of proficiency that workers must meet in their performance. The nature of the criteria will vary with the nature of the performance. Sometimes speed of performance is critical, sometimes not. Sometimes it is critical that a set of performance steps be performed in an exact sequence, sometimes not. In general, criteria for a given performance or product relate to the following areas:

- Quality (e.g., *so that the engine idles at its smoothest point*)
- Accuracy (e.g., *to ± 5% of wide range level*)
- Percent or number to be achieved (e.g., *with 70% correct*)
- Maximum number of errors permissible (e.g., *with no more than one error*)
- Time/Speed/Rate of production (e.g., *in 30 minutes*)
- External authority (e.g., *in compliance with plan procedures*)
- Degrees of supervision (e.g., *without assistance*)
- Combination (e.g., *in correct sequence and within 10 minutes*)

The level of specificity in this component needs to be practical as well. One needs to be able to read the objective quickly and easily. If workers are to perform according to detailed specifications in some job manual, do not list all those specs. Instead, write *in accordance with the [name of job manual].*

Some novice objective developers are tempted to use percentages as criteria on a frequent basis because they seem so clear and measurable. However, using an arbitrarily established percentage as a criterion may be worse than having no criterion at all. For example, assume that performance of a task or skill will be measured according to whether it meets minimum requirements as specified by the criteria on a performance test. Arbitrarily establishing that the learner must meet 70 percent of those requirements is not only **not** helpful, but it undermines the whole point of having minimum requirements. And what if one of the procedural requirements the trainee did not meet was critical to safe performance of the task or skill? As a general rule of thumb, if you are going to use a percentage as a criterion, make sure it is a valid one based on occupational standards.

When all three components have been developed correctly, each resulting objective will meet the following three criteria:

- The work task to be performed (the process and/or its product) is observable.
- All critical conditions (work context) and criteria (performance outcomes) governing performance are specified.
- All people reading the objective interpret it in exactly the same way.

Reflection on Reading 3

- Objectives sometimes specify the following type of job context: *Without reference to the written procedures.* Why might this not be an appropriate job context for a performance objective in a workplace literacy program? Under what conditions would its use be appropriate?

- If objectives provide structure and your philosophy calls for an unstructured, spontaneous approach, how could you resolve the two positions?

- If you have completed the learning guide, *The Context of Workplace Literacy: The Learner*, you read about the characteristics of the adult learner. Based on the characteristics, how would adults, in general, be likely to react to a learning situation structured by performance objectives?

- The areas that are often covered in the performance outcomes were listed as quality, accuracy, percent or number to be achieved, maximum number of errors permissible, time/speed/rate of production, external authority, degrees of supervision, or a combination. Can you think of an example of each that would apply to the performance of tasks in a job you have held in the past?

Develop a Training Plan and Performance Objectives from the Job and Literacy Task Analyses

- Obtain a list of job tasks and related literacy skills. This may be one you obtain from your literacy program managers (e.g., one done in preparation for a specific literacy program), or it may be the partial version you developed in the structured activity for another learning guide in this series, *Relate Workplace Literacy Programming to the Needs of Business and Industry*.

- Using the list of job tasks and related literacy skills you obtained, ask a peer (fellow instructor, family member, or friend) to role-play a learner in the program and to select those tasks/skills that he or she needs or would like help in developing.

- Prepare a one- to two-page description of your overall philosophy concerning workplace literacy training and the specific concepts (e.g., competency-based, metacognition, collaborative learning, reflective practice) that will guide your actions as an workplace literacy instructor.

- Using the list of job tasks and related literacy skills you obtained, develop a portion of a training plan outlining instruction for a short training period.

- Prepare a one- to two-page description of how your statement of philosophy would affect the way in which you delivered the instruction specified in the training plan.

- Develop performance objectives for at least five of the job tasks selected.

TOPIC: **Develop a Training Plan and Performance Objectives from the Job and Literacy Task Analyses**

Evaluation Guidelines

Directions: Check your competency with the following criteria:

Learner Self-Check Did you—		Review Checklist Did the learner—
☐	1. Obtain a list of both job tasks and related literacy skills to use as the basis for program planning?	☐
☐	2. Select job tasks/related literacy skills based on learner needs and interests?	☐
☐	3. Develop a statement of philosophy that— a. accurately represented your beliefs?	☐
☐	b. covered all relevant areas of workplace literacy instruction?	☐
☐	c. was internally consistent (i.e., stated beliefs were not contradictory)?	☐
☐	d. was realistic in terms of the actual instructional situation?	☐
☐	e. was well organized, clear, and readable?	☐
☐	4. Prepare a training plan that— a. clustered and organized instruction logically and realistically?	☐
☐	b. specified time allocations logically and realistically?	☐
☐	5. Identify specific ways that the philosophy could be translated appropriately into action?	☐
☐	6. Develop performance objectives that— a. contained all three components: work context, work task, and performance outcomes?	☐
☐	b. were stated precisely?	☐
☐	c. specified conditions and criteria consistent with the actual job situation but practical for the instructional situation?	☐

Learner:

Reviewer:

Learner: ______________________ Reviewer: ______________________

Level of Performance: If the evaluation results indicate a need for further competency development—or if the learner wishes to pursue the topics covered in further breadth or depth—please refer to the supplementary resources described in the Annotated Bibliography, which follows.

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Langenbach, M. Towards a Workplace Literacy Curriculum Model." In *Basic Skills for the Workplace* by M. C. Taylor, G. R. Lewe, and J. A. Draper, eds. Toronto, Ontario: Culture Concepts, 1991. (ED 333 180)

> The author describes the need for a workplace literacy curriculum model to accommodate two purposes in order to be successful: (1) improving a product or service and (2) promoting more autonomous functioning of a person. In the process, he provides a great deal of food for thought concerning the problem of balancing management needs, workplace needs, and learner needs.

Caine, R. N., and Caine, G. *Making Connections: Teaching and the Human Brain*. Alexandria, VA: Association for Supervision and Curriculum Development, 1991. (ED 335 141)

> If you found metacognition to be a fascinating subject, you may wish to learn about other brain-based learning strategies and the research they are based on. In the first part of this book, the authors examine education today in light of critical findings of brain research. In Part II, they select specific topics, theories, and models of brain functioning that appear to address current issues in education and provide implications for curriculum restructuring and design. In Part III, they describe the elements of instruction that they believe more fully use the brain's capacity to learn. These later chapters serve as guides for translating what is known about how the brain learns to actual orchestration of the learning environment.

Resnick, L. B., and Klopfer, L. E., eds. *Toward the Thinking Curriculum: Current Cognitive Research*. 1989 Yearbook of the Association for Supervision and Curriculum Development. Alexandria, VA: ASCD, 1989. (ED 328 871)

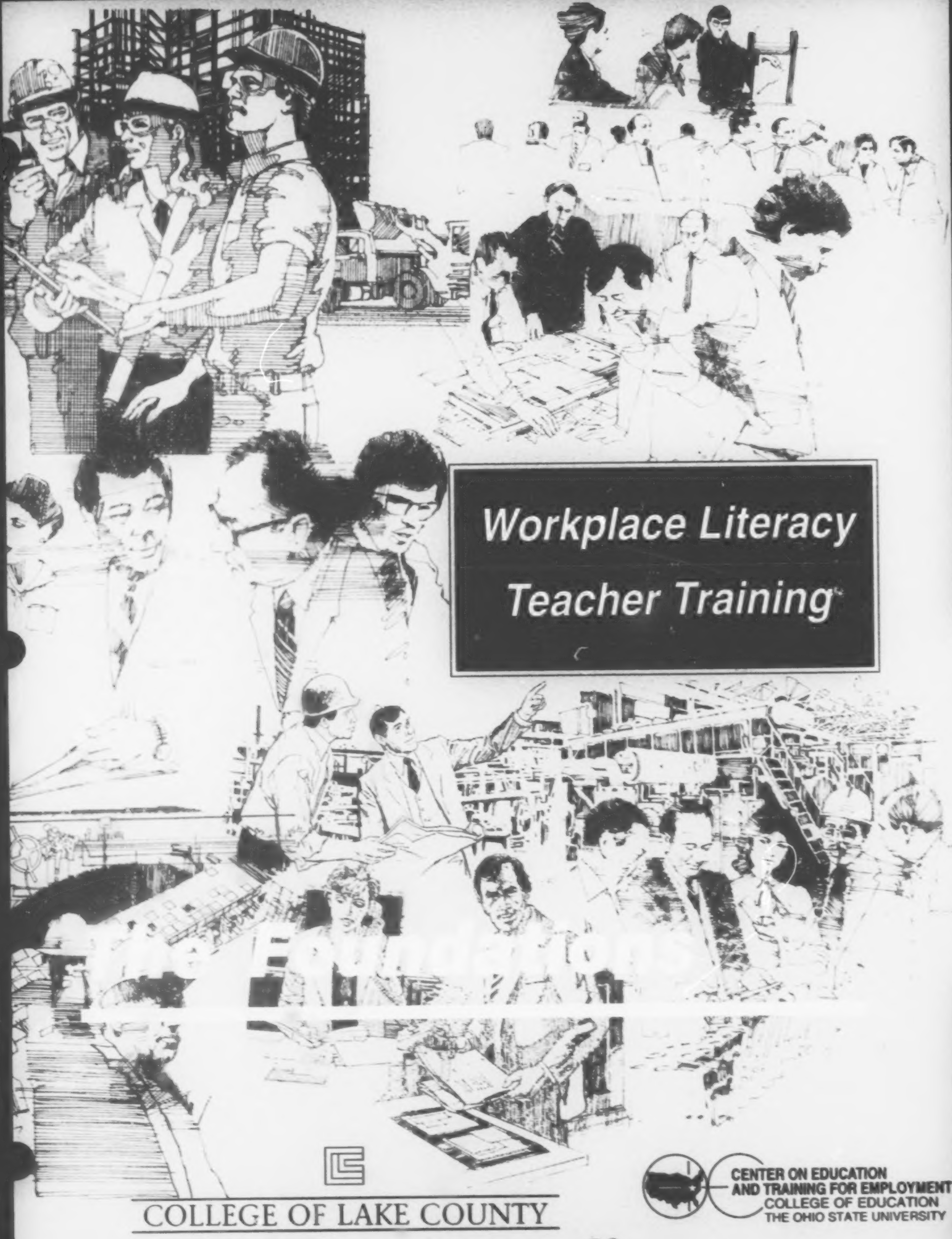
> This yearbook combines the two major trends/concerns impacting the future of educational development for the next decade: knowledge and thinking. Rather than polarize these two educational necessities, it integrates them. Noted theorists, practitioners, and scholars offer a rich background of research and practical ideas to help educators address such intriguing questions as the following: Which of the tools of inquiry are important and why? Why are modes of inquiry and thinking important in understanding and in teaching school subjects? How do modes of thinking intersect with the knowledge base in a subject? What instructional processes best develop subject matter concepts in students?

Fingeret, A., and Jurmo, P., eds. *Participatory Literacy Education*. San Francisco, CA: Jossey-Bass, 1989.

> The contributors to this volume present the social and historical context of participatory literacy education, an extensive discussion of the benefits of its use, and a series of case histories of programs in which the approach has been used. The case histories describe the philosophy and characteristics of each program and, in some case, the problems that had to be overcome as the program developed.

National Center for Research in Vocational Education, The Ohio State University. *Develop Student Performance Objectives*. 2nd ed. Module B-2 in the Professional Teacher Education Module Series. Athens, Georgia: American Association for Vocational Instructional Materials, 1983. (ED 228 460)

A performance-based instructional module designed to provide information and practice in the key concepts underlying the development of performance objectives. Instruction sheets address the need for precise performance objectives, the components of a well-written objective, development of performance objectives tied to the three learning domains (cognitive, psychomotor, and affective), and the sequencing of objectives.



Workplace Literacy Teacher Training

The Foundations

Planning & Evaluation

COLLEGE OF LAKE COUNTY

CENTER ON EDUCATION
AND TRAINING FOR EMPLOYMENT
COLLEGE OF EDUCATION
THE OHIO STATE UNIVERSITY

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Improve Teaching Effectiveness Through Planning and Evaluation

Introduction

The workplace provides, in many ways, ideal conditions for successful teaching and learning. If traditional classrooms seem to separate learning from the real world, workplaces are rich in opportunities for realistic application of theory and knowledge. An important role of the workplace literacy instructor is to reflect constantly in your class, not only the goals and objectives of the literacy program, but also a dynamic understanding—and participation in—the learners' work environment: for example, the interactions of union and management, the implications of new technology, foreign competition, and other factors that affect the quality of the work life. Your students are workers. What you want is for their success in the classroom to be reflected in their job performance and employment opportunities, as well as in other personal but important ways in their lives. When you present learning tasks in the context of the workplace, you not only facilitate learning by providing meaningful reference points (knowledge transfer), but you also help learners—and their company—by enhancing their capacities on the job.

High expectations from a number of different groups and individuals center directly on the workplace literacy instructor. Your performance will be examined by your educational organization, your learners, the company management, union trainers, union leadership, plant supervisors, the press and community groups, and of course you have expectations of yourself. Do all these groups expect the same results from you? How can you organize your approach to instruction so as to bring together the various goals of these groups, and still do the best job you know how to do with each learner? Furthermore, with so many "audiences" observing your performance, who really should be in the best position to judge the effectiveness of your instructional efforts?

This learning guide will provide you with information and resources to help you to maintain accountability with all the above-mentioned groups and at the same time improve your effectiveness with your learners. The key is to plan your lessons keeping the learners, your educational organization and company goals in mind, and to seek out honest information about the success of your work. Regardless of who is responsible for over-all planning and evaluation of your workplace literacy program, much of the success of the program will rest with your own serious efforts in planning your lessons and obtaining feedback.

Two articles are included in this guide, each followed by samples that may be of practical use as you plan for effective teaching. The first reading, "Approaches to Assessment in Workplace Literacy Programs: Meeting the Needs of All the Clients," explains how assessment is viewed from the perspective of four clients. Your program must have mechanisms for demonstrating effectiveness and progress to all of its clients. Furthermore, as an instructor, besides administering typical assessment instruments such as the *TABE* and the *cloze*, you may very well design surveys and questionnaires to capture important measures of your students' progress through the eyes of their supervisors.

The outcome of most workplace literacy programs is expected to go beyond successful classroom experiences and to cause beneficial changes in the workers' behavior, even to the point of improving "bottom line" indicators of the company's performance. For this reason, you will need to be aware of the company's goals for your program on a daily basis. The daily lesson plan, drawn directly from the goals and objectives set by the assessment, will help you to do this, besides guiding your instructional presentations.

The second reading, "Develop a Lesson Plan," takes you through the basic components of a good lesson plan. It is followed by two sample lesson plans developed specifically for workplace literacy teachers. Besides noting how the teacher planned the lesson using this format, you will want to observe the strategies used to link this lesson with broader goals of the program. The last portion of the reading explains how this linkage can be developed and maintained.

Objectives

- Identify methods for obtaining feedback on your teaching effectiveness from all client/stakeholder groups associated with your program.
- Identify factors to consider in designing lesson plans that reflect the goals and information needs of all client/stakeholder groups.
- Modify your instructional practices and lesson plans using feedback gathered from client/stakeholder groups.

To Help You Meet the Objectives

- Study the material that follows:

Reading 1:	Approaches to Assessment in Workplace Literacy Programs: Meeting the Needs of All the Clients
	Assessment Samples
Reading 2:	Develop a Lesson Plan
	Lesson Plan Samples: Workplace Communications Strand and Workplace Mathematics Strand
	Workplace Literacy Lessons: From Literacy Audit to Learner

- Reflect on the questions posed after each reading. The questions are designed to help you clarify and extract meaning from the reading that can be helpfully applied. There are benefits to both individual and interactive reflection—
  - ~ As an individual, consider how you would apply the information either in the program to which you are already assigned or in a program to which you might be assigned.
  - ~ If you are able to discuss these questions with other instructors or program staff, try to get other perspectives on the reading. Compare notes on the ways the ideas can

be and have been applied in their experience. If the experiences differ, help each other probe the possible reasons for the differences.

- Complete the Application Activity.
- Evaluate your own competencies using the Evaluation Guidelines. This is an opportunity to assess your own learning and identify any areas in which you feel less competent or confident. If indicated or desired, take advantage of the opportunity to review the related material in the Annotated Bibliography. You may also want to seek out a more experienced person who can be a mentor to you on this topic, helping you assess your competency and acting as a resource person.
- Ask your reviewer to evaluate your skills also. Be sure to note the input from the reviewer that can provide the basis for your further competency building.

To Help the Reviewer Guide and Evaluate Learner Performance

These learning guides have been designed to allow for maximum flexibility of use. For those individuals using them for professional development (without ties to a formal program), the guides allow for self-study. Such use may, however, limit the opportunity for interaction and practice in a group setting. Therefore, if learners are completing these guides in a group setting under your direction, it is strongly recommended that you identify such opportunities and capitalize upon them.

Reflection questions at the end of each Reading and an Application Activity and Evaluation Guidelines at the end of each learning guide provide opportunities for you, as a reviewer, to monitor learner progress and evaluate learner performance on the workplace literacy knowledge and skills being developed. However, your expectations should be based somewhat on the learner's background (e.g., previous instructional experience) and the learner's progress in the program. Individuals with previous experience as instructors in workplace literacy programs should be expected to extend their thinking and activities beyond the level expected of those without such experience.

For example, if the learner is asked to "define company culture," individuals ***without*** instructional experience would be expected to respond solely on the basis of their reflections concerning the readings provided within the guide. The responses expected of individuals with instructional experience, however, should go beyond the readings, incorporating their real-world experiences as well. Likewise, as individuals complete more and more of the learning guides, their work should reflect that progress. Knowledge and skills gained in earlier guides should be ***integrated*** into their reflections and activities as they work through later guides.

Flexibility can also be provided concerning how the learner will demonstrate competency. At a minimum, the learner should submit ***written*** descriptions, definitions, and explanations to demonstrate successful completion of the Application Activity. These should be evaluated—by both you and the learner—using the criteria provided in the Evaluation Guidelines. If feasible, however, you should also arrange to meet with the learner to discuss his or her written documentation. At that time, you could also pose hypothetical or actual situations related to the skill criteria and ask the learner how he or she would handle those situations. Another possibility would be to ask individuals to perform the skill as part of a presentation or demonstration to others in the class or group.

It is also desirable that, whenever possible, you and the learner identify opportunities for expanding on the learning experiences presented in the guide—ways for the learner to apply the learning more deeply and broadly. The question, "What plans do you have for learning more about the skill covered in this guide?" could well be a standard one. In many cases, the learner can use his or her work in the Application Activity as a building block for further exploration.

In summary, the learning situation is not one in which strict criterion-referenced standards based on percentage attainment or mastery levels are suitable, nor would one mode of demonstration be feasible—or appropriate—for everyone. You and the learner should discuss and reach agreement in advance on the level of achievement expected and mode of demonstration to be used so as to create the optimal learning experience. The intent is for the learner's professional development to be competency-based, rigorous, and designed to motivate further learning, yet sensibly adapted to the situation and to the learner's needs and abilities. Hopefully, the learners will carry this flexible philosophy and approach into their own workplace literacy programs.

"APPROACHES TO ASSESSMENT IN WORKPLACE LITERACY PROGRAMS:
MEETING THE NEEDS OF ALL THE CLIENTS" by E. N. Askov
Journal of Reading v36/n7 (April 1993): 550-554

Assessment in workplace literacy programs must satisfy multiple stakeholders or clients, each with different interests in the outcomes of the program; multiple approaches to assessment are necessary to satisfy these various information needs. In community adult literacy programs, an instructor usually has only one client--the *learners.*

In the case of workplace literacy programs, however, two additional clients emerge, namely the *union* (if one exists) and the *management of the company.* In the case of a unionized workforce, the union must be involved from the beginning as a decision-maker representing the workers who potentially may join the program. If the business or industry is offering the program onsite and releasing workers from their jobs on company time, the instructor clearly has the business or industry partner as a client.

A fourth client may, in fact, also be requiring assessment information—namely, the *literacy organization*—in response to some regulatory or funding agency, such as the state department of education.

What are the assessment information needs of each client? The learners may have very specific goals for the literacy instructional program which may or may not pertain to their jobs, such as reading the Bible or newspaper and helping their children with homework. (In some cases, workers enter workplace literacy programs in order to leave their jobs, and even the company, by improving their literacy skills!) Workers' goals for the instructional program must be assessed individually, best through confidential conferences.

The second client, the union, is usually interested in assessment that focuses on the welfare and development of the workers (Education Writers Association 1991, Sarmiento and Kay 1990). In contrast to the very specific objectives of the individual learner, the union may have more global goals for the workplace literacy program, such as empowering workers to become more active decision-makers in the company. Assessment for the union client should be designed around the goals of the union at the particular workplace.

The business or industry management client, on the other hand, usually offers a workplace literacy program, especially if it is "on the clock," out of concern for workers's skills (Carnevale, Gainer, and Meltzer 1990; Johnston and Packer 1987; *The Bottom Line* 1988). Sometimes management wants to upgrade workers' basic skills to enable them to do their current jobs better or to prepare for workers' possible future difficulties when new technology, such as computers, is installed in the company. Assessment information for the business/industry client should focus on job-related basic skills.

Finally, the instructor may have to satisfy the assessment needs of the literacy provider, driven by the funding requirements or state mandates. (Some states, for example, require a specific standardized test; the organization may not be allowed to serve learners who score above a certain grade equivalent level, such as 8.9.) The instructor may be required to assess learners with a standardized test which is irrelevant to the content of the curriculum and to the assessment information needs of the learners, the union, and the company.

While these observations do represent generalizations, and many exceptions do exist (Jurmo 1991), they do allow us to study approaches to assessment from different viewpoints. The intent is not to prescribe but to suggest what may be appropriate to satisfy the information needs of the various stakeholders in a workplace literacy program.

Assessment Tools in Workplace Literacy Programs

Meeting the assessment information needs of the different clients within a workplace literacy program requires different tools. The needs of the various clients, in fact, could be portrayed as on a continuum ranging from informal, qualitative assessment to formal standardized testing that yields quantitative information. Taken all together, the assessment process becomes a holistic look at learners' skills, abilities, and interests. [The figure at the top of the next page graphically presents] the tools that might be used for the various clients in a workplace literacy program.

Learner-Centered Assessments

Learners often have unique goals for entering a workplace literacy program—goals which may or may not be similar to those of the other clients. These goals must be determined during the initial assessment process to make instruction meaningful to the learners; accomplishment of these goals should be reassessed periodically. Learners also differ in prior knowledge which affects their ability to learn (Farr, Carey, and Tone 1985); assessment of prior knowledge of occupational and basic skills can also occur informally in individual interviews.

Since most workplace literacy programs are voluntary, even when offered on company time, it is important to meet these unique needs along with delivery of the workplace literacy curriculum. Periodic individual conferences are advisable during which the learner's goals and progress in meeting those goals are reviewed.

Other assessments that meet the information needs of the learners include portfolios (Tierney, Carter, and Desai 1991; Wolf 1989), in which the learner's work samples are collected over time. Alternative assessment approaches (Lytle and Wolfe 1989), in which learners read a variety of everyday (or job) materials, may be useful to learners because these approaches emphasize learners' strengths rather than deficits. Participatory approaches (Jurmo 1991), in which the learner and instructor plan together the assessment and instruction processes, are also appropriate. Instructional approaches, such as the language experience approach, may also assess individual's learning needs, especially for those functioning at beginning reading levels (Frager 1991; Soifer, Young, and Irwin 1989).

Union-Centered Assessments

Unions, representing workers, are concerned that learners' individual needs be met. But unions are also concerned about the general welfare and development of the workforce as a whole. Workers in workplace literacy programs can be assessed for growth in positive attitudes toward further education and lifelong learning by attitude scales (e.g., Brown 1990, in using 5-point Likert scales to determine how workers feel about themselves as learners, about the teacher and program, about the instructional techniques, and so forth).

Structured interviews should follow up written attitude inventories to gain further information about the impact of the program. Retrospective interviews, in which learners state what they can do now that they couldn't do before the program, also provide information about workers' development. Similarly, self-rating scales of competence in various work- and literacy-related tasks can indicate growth.

Assessment Continuum

Learner	Union	Management	Provider
Informal/ Qualitative			Formal/ Quantitative
Portfolios	Retrospective Interview	Curriculum-Based Assessment	Standardized Education Tests
Alternative Assessments	Attitude Assessments	Criterion-Referenced Tests	
Participating Approaches			

Management-Centered Assessments

Management is typically concerned about mastery of job-related basic skills which will result in improved job performance. While management and human resource personnel frequently speak of grade equivalents when referring to workers's skills (e.g., a customer service representative needs to read at an eleventh grade reading level), grade equivalents do not easily translate into workplace competencies. In fact, Diehl and Mikulecky (1980) found that workers can read at several grade levels higher than their assessed reading levels (on standardized tests) when reading familiar materials such as those found in the workplace.

Curriculum-based assessments (Bean and Lane 1990, Fuchs and Fuchs 1988), however, can provide more meaningful assessment information because they reveal the workers's progress in learning the curriculum. These assessments, which are often in the form of short check tests embedded in the instructional materials, serve as frequent assessments of learning as workers progress through instruction.

Criterion-referenced tests (Popham 1978) also provide meaningful assessment information by indicating mastery or non-mastery of skills targeted for instruction at a given criterion level, such as 80 percent. These assessments may be used as pre- and posttests, as measures of mastery resulting from the instructional program, rather than embedded in the curriculum as periodic check tests (curriculum-based assessments). Such assessments should focus on the skills—both reading-to-do and reading-to-learn—that were identified as being essential in the literacy task analysis and therefore taught in the curriculum, such as job-related vocabulary.

While it has been reported that job-related basic skills assessments (curriculum-based assessments and criterion-referenced tests) are becoming used more widely in workplace literacy programs (HR Strategies 1991), and are now encouraged in the national workplace literacy grants program, a concern exists about the validity and reliability of these assessment instruments. While they yield quantitative information, these scores may or may not be accurate if technical/statistical analyses, which require some expertise in test construction, have not been undertaken. Potential legal problems could arise if quantitative information is used without correct test development procedures (Douglas and Williams 1992).

One solution to this problem is to use standardized criterion-referenced tests such as CASAS (Comprehensive Adult Student Assessment System 1989) which ties workplace competencies to criterion-referenced tests that have been validated and checked for reliability. The difficulty with this approach is that the CASAS tests do not measure the specific job-related vocabulary and other skills needed in the workplace.

Provider-Centered Assessments

Cloze tests (Dupuis 1980, Jongsma 1980), which are commonly used by reading and classroom teachers, are becoming more widely used in workplace literacy programs. They allow the instructor to assess quickly the reading abilities of the workers in a workplace literacy program using materials from the workplace. The instructor is able to see who can handle materials from the job independently, with some help (instructional level), and not at all (frustration level). This instrument is particularly useful in workplace literacy programs which are open to all volunteers.

While some programs are using cloze tests as pre- and posttests for program evaluation, this use is inappropriate if test reliability has not been established or if learners use the job materials (from which the cloze test is drawn) in instruction during the program, invalidating the posttest cloze score.

While many literacy providers are using alternative assessments, such as the cloze, Ehringhaus (1991) found that most programs relied on the *Tests of Adult Basic Education* (1987) for assessment and accountability. While the limitations of standardized testing have been discussed (Lazar and Bean 1991; Tierney, Carter, and Desai 1991), and alternatives for adult literacy (which could be used in workplace programs) have been suggested (Scales 1987), standardized achievement tests do provide useful information in workplace literacy programs. Sticht (1990, 1991) points out that standardized tests do permit comparisons among workplace literacy programs; curriculum-based assessments, criterion-referenced tests, and cloze tests, being specific to the content materials and job tasks of the particular workplace, do not. Pelavin Associates (1991) reports this as one of the difficulties in trying to evaluate the impact of workplace literacy programs.

Standardized tests also offer another benefit in showing the amount of transfer of learning from a job-related curriculum to general literacy tasks. Both Sticht (1987) and Brown (1990), evaluating different types of workplace literacy programs, report that job-related basic skills instruction resulted in increased general functioning in literacy skills as measured by standardized achievement tests.

A Final Note

Looking at assessment from different view points is not intended to be restrictive. Fortunately, management personnel in some workplaces are considering qualitative information from informal assessments. Educators are recognizing the limitations and problems of using grade equivalents from standardized tests. A holistic approach to assessment provides the most information.

Furthermore, assessment must be an ongoing process. While this discussion has focused primarily on assessment for diagnosis and program evaluation, the instructor should be collecting ongoing assessment information of interest to all clients throughout the instructional program. Assessment is crucial to the success of workplace literacy programs because only through accurate information can learners be taught effectively and the value of these programs be demonstrated.

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ASSESSMENT SAMPLES
Adapted from "Workplace Literacy for World Class Manufacturing," Final Report
by W. D. Dowling et al.
Columbus, OH: College of Education, The Ohio State University;
Inland Fisher Guide Division of General Motors; and UAW Local 969, 1992 (ED 347 302)

Sample 1: Learner-Centered Assessment—Parameters and Procedures for Developing Learner Profiles

For its DoED-sponsored National Workplace Literacy Program, the OSU project team developed an interview protocol to probe learners about what got them interested in more learning and what kinds of things in their background contributed to past and present attitudes toward learning. The interview guide was concerned both with communication and math skills.

Learner profiles were developed using this protocol and a data collection guide to shape the profiles. The objective of each learner profile was to illuminate the degree and nature of change in communications and math capacity of each learner and followed, but was not necessarily limited to these evaluation questions:

- Who is the learner (demographics, learning styles, etc.)?
- What are pre- and post- indicators of progress (GAP, cloze, ABLE, etc.)?
- What does learner say about his/her own progress (interviews with teachers, plant personnel, progress scales, etc.)?

Developing the learner profiles provided interpretative material for pre-post measures and revealed important information about learner responses to Workplace Literacy treatments. Questions such as the following shaped the interpretation of data gathered through this process:

- What do learners actually do when they are reading/computing?
- How do learners react/respond to the present teaching/learning strategies in the program?
- What future interventions should be most successful with this learner?

Learners selected included non-readers, mid-level readers, and upper level readers. Math subjects were selected using the same criteria. The same individual could serve as subject for both math and communications profiles. The files were examined to locate learners in these categories for whom we already had a good deal of information, then the gaps were filled as needed to complete the profile. Care was taken not to subject learners to redundant or irrelevant questioning.

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Sample 2: Union-Centered Assessment A

Read each of the following statements and decide which response most clearly agrees with how you feel about the statement. Put a check mark (✓) under the column for your response: Yes, No, or No Comment (NC).

Your responses will be confidential; you do not have to put your name on this form. Thank you for helping us evaluate the Workplace Literacy Program.

	Yes	No	NC
1. The instructors help make me feel at ease in the program.	☐	☐	☐
2. The program environment makes it easy to study and concentrate.	☐	☐	☐
3. It is easy to find out information about the program.	☐	☐	☐
4. The instructions given are easy to understand.	☐	☐	☐
5. I like the one-on-one instruction.	☐	☐	☐
6. I would like more group work.	☐	☐	☐
7. I am able to use the skills I learn in the program on my current job.	☐	☐	☐
8. I enjoy the instructional materials used.	☐	☐	☐
9. I would recommend the program to other employees.	☐	☐	☐
10. The skills I am learning in the program are helping me reach my goals.	☐	☐	☐
11. The instructors are knowledgeable about the skills taught.	☐	☐	☐
12. The instructors are organized.	☐	☐	☐
13. The instructional materials used are appropriate for me.	☐	☐	☐
14. I am proud of what I have learned in the program.	☐	☐	☐

15. Check the skills that you have learned or improved upon:

_____ writing
_____ spelling
_____ expressing an opinion
_____ problem solving
_____ reading to remember
_____ reading for details
_____ reading for analyzing information
_____ analyzing information on charts
_____ working with basic addition, subtraction, multiplication, or division
_____ working with fractions
_____ working with decimals
_____ working with percent
_____ understanding how I learn best
_____ study skills

16. Additional comments:

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Sample 3: Union-Centered Assessment B

Think about yourself and the time you have spent in the Workplace Literacy Program. Then answer the following question in an essay.

★ What changes have you experienced in your personal and work life since participating in the Workplace Literacy Program? Compare and contrast how you felt about yourself and your learning abilities when you began the program and how you feel now.

NOTE: The above statements can be used both as a writing exercise and also as a self-assessment measure.

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Sample 4: Union-Centered Assessment C

Math questions for learner profile interviews:

1. In general, how do you feel about math?
    - (If a positive answer) Do you tend to find math easy?
    - (If a negative answer) Do you tend to find math difficult?
    - Are there some kinds of math problems you enjoy, some you hate? (What are those?)
2. Do you think your feelings about math relate to how you felt about math in school?
    - Did you enjoy math in school?
    - What kinds of activities do you remember doing in math?
    - What do you remember about your math teachers?
3. Do you use math in daily life or on your job? How? (For example, budget, groceries, hobbies, money, weight, height, medicine, food ingredients such as sodium and cholesterol, help child or spouse, counting parts, wage statement, packing, inventory, gasoline, lottery) Do you find these math uses easy or difficult? Why or why not?
4. Do you have "tricks" that you use to remember math facts or solve problems? (If so), Can you give an example?
5. When you have trouble with math ***on the job*** or ***in personal life***, do you get help and, if so, how do you get help?
6. Do you know people who have "math anxiety"? (Explain if necessary and probe about characteristics.) If you were giving advice to a friend on getting over "math anxiety," what would you say?
7. If you were a teacher, how would you be able to tell if someone was having trouble with math?

Also: Ask learner helper to add a response to the following question: What does [name] do when faced with a problem in completing a math problem; what kind of logic/strategy is used?

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Sample 5: Management-Centered Assessment (Rating Scale)

(Administer Pre- and Post- Instruction)

1. Demonstrates ability to solve problems.

0	1	2	3	4	5	**Comments**
Does not identify problems	Identifies there is a problem	Identifies there is a problem & resources to help solve problems	Identifies possible solutions	Carries out plan to solve problems	Evaluates outcome(s) for appropriateness	

2. Demonstrates ability in interpersonal communications.

0	1	2	3	4	5	**Comments**
Avoids conversation	Responds when spoken to	Seeks conversation	Volunteers information & ideas	Voices ideas & opinions with appropriate reasoning	Exhibits leadership skills by volunteering to take an active role in team meetings, supporting team members	

3. Demonstrates ability to perform current job assignment.

0	1	2	3	4	5	**Comments**
Unable to perform job assignment	Frequently needs assistance	Occasionally needs assistance	Performs current job assignment satisfactorily	Performs current job assignment satisfactorily and cooperates with others in work area	Performs job satisfactorily and is also willing to take on other assignments and assist others in work area	

4. Demonstrates commitment to total customer satisfaction.

0	1	2	3	4	5	**Comments**
Demonstrates no concern for quality	Does not consistently produce quality products	"Just getting by" (consistently producing quality products)	Communicates quality problems	Communicates quality problems, and concentrates on adding value	Totally committed to satisfying customer (communicates quality problems, concentrates on adding value, and committed to continuous improvement)	

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Sample 6: Provider-Centered Assessment (Rating Scale)

(Administer Pre- and Post- Instruction)

Learner # ____________________

Prepared by ____________________

1. Short-term goal focus.

0	1	2	3	4	5	**Comments**
States no short-term goal(s)	States short-term goal(s)	Waits for guidance to work toward goal(s)	Gives feedback on process	Makes suggestions for attaining goal(s)	Reaches short-term goal(s)	

2. Long-term goal focus.

0	1	2	3	4	5	**Comments**
States no long-term goal(s)	States short-term goal(s)	Waits for guidance to work toward goal(s)	Gives feedback on process	Makes suggestions for attaining goal(s)	Reaches short-term goal(s)	

3. Demonstrates ability to solve problems.

0	1	2	3	4	5	**Comments**
Does not identify problems	Identifies problems	Identifies causes of problems & resources to help solve problems	Identifies possible solutions	Implements plan to solve problems	Evaluates outcome(s) for appropriateness	

4. Demonstrates ability in writing.

0	1	2	3	4	5	**Comments**
Does not write	Does not write in complete sentences, many grammar errors, unclear meanings	Needs many revisions, some correct sentences	Some errors, needs some revisions, usage mostly correct	Corrects own errors, good clarity, few errors	Has clarity, organization, correct grammar, & complex sentences, corrects own errors	

5. Demonstrates ability in mathematics. (Pre ratings based on ABLE)

0	1	2	3	4	5	**Comments**
No math skills	Whole number mastery	Fraction mastery	Decimal mastery	Percent mastery	Pre algebra mastery	

6. Demonstrates ability in interpersonal communications

0	1	2	3	4	5	**Comments**
Avoids conversation	Responds when spoken to	Seeks interaction	Volunteers information & ideas	Voices ideas & opinions with appropriate reasoning	Exhibits leadership skills	

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Reflection on Reading 1

- It is standard to think of the learners as your clients. What other groups must you consider as clients or stakeholders in your program? In what ways?

- What activities and instruments might you develop and implement to gather information about your effectiveness from your program's clients/stakeholders?

- It is possible that your learners might make marked progress in your class sessions and yet the program fails. Can you think of reasons why?

Develop a Lesson Plan, 2nd ed.
Module B-4 in the Professional Teacher Education Module Series by NCRVE-OSU, 6-11
Athens, GA: American Association for Vocational Instructional Materials, 1984 (ED 240 314)

The Why's and How's of Lesson Planning

In all of the literature, no two educators agree completely on the content and form of a lesson plan. However, the one point they all agree on is that ***all*** teachers need to do some form of lesson planning. This is as true for the postsecondary instructor as it is for the secondary vocational teacher.

Why is daily lesson planning so vital to the teaching process? The overworked analogy of the cook in the kitchen shows why. Novices attempting to create an edible meal need to know when the meal is to be served and how much time each item needs to cook before they can know when to start each item. They need recipes to show them how to prepare each item. These recipes indicate ***time, quantities, order***. They need to know what foods go best with other foods to make a well-balanced meal. In other words, they need to plan in advance.

As these cooks become more and more proficient, their planning stages may become less visible to an onlooker. Planning still occurs, however. It just occurs more easily since these cooks have developed the habit of thinking in planning patterns.

Likewise, beginning teachers need to prepare thorough plans to guide their instructional efforts. In order to make a plan, you have to think through (1) where you're going, (2) how you're going to get there, and (3) how you'll know when you've arrived. You are visualizing just what you will do when you walk into the classroom. In addition, through good planning, you can anticipate problems and plan, in advance, to eliminate or overcome them.

You have probably had the experience of studying for an exam and feeling you really ***knew*** the material—that is, until you were asked to ***use*** it on the test. At that point, you realized that you were just ***aware*** of the material. When you have to explain material to someone else, an in-depth comprehension of the material is needed. This takes careful planning, and through the planning process, one really masters the material. Planning also allows you to anticipate what your needs will be for supplies, tools, equipment, and other support materials. All these organizational efforts are ultimately a ***time*** saver. As you plan on paper, you will weed out the extraneous and save the essential.

In the classroom, the plan serves as a handy guide during your presentation. The fact that your lesson is well planned should give you confidence, give learners a sense of security, and give your lesson a sense of purpose and direction.

Finally, since daily plans grow out of unit plans or weekly plans, daily plans help keep you on track in your overall goals, thus providing for continuity in the course and in learner progress.

What Is a Lesson Plan?

A lesson plan is a simply stated, clearly written, flexible, and individualized teacher aid for conducting a class. It is individualized in two senses:

- It is based on the individual needs, interests, and abilities of the learners.
- It is formatted according to the goals, needs, and style of the teacher.

Although forms for writing lesson plans vary, basically there are three major sections to each plan: (1) lesson approach, (2) lesson development, and (3) lesson summary. In addition, lesson plans usually include some preliminary information. The following is a discussion of this preliminary information and of the three major sections and their components.

Preliminary Information

Somewhere at the top of your lesson plan, you need to provide certain identifying information. In the workplace literacy setting, instead of referencing a course of study or a unit (typical for public schools), you will want to reference the job task and literacy skill embedded in the task. (See samples at the end of this section of the reading.) The lesson plan may reference more than one skill and task and can be pulled out for use whenever one of those particular literacy skills needs to be practiced by a worker responsible for or familiar with that job task.

Lesson Approach

The critical components in the lesson approach section of planning are the objectives and the lesson introduction. The ***objectives, aims, goals,*** whichever you call them, are the "where are you going" portion of your plan.

The objectives for the lesson plan are drawn from the duties and tasks produced through a job analysis (e.g., the DACUM process). Literacy tasks may have been developed from the tasks and you will find them referenced on the chart of job tasks and related literacy skills. If not, you will be responsible for analyzing the job tasks yourself, often with the help of the learners. It is critical that your lesson plans always reflect the real basic skill(s) needed to perform tasks/operations of a real job—preferably one the learner performs or aspires to perform.

Based on this input, you then can write specific objectives for daily lesson plans designed to meet those needs. These objectives should be ***stated in terms of the learner,*** not the teacher. You do not state what you will do, but what learners will be able to do as a result of the instruction. Your objective is not *to explain how to write a résumé.* Rather, the objective would be, *[The learner will] develop a résumé*, or *[The learner will] demonstrate knowledge of what goes into a résumé.*

This brings up a second point: The objectives must be ***stated in terms of performance*** or observable behavior. Note the verbs *develop* and *demonstrate* in the objectives above. These show action and indicate something to be performed.

Third, objectives need to contain information concerning the ***conditions under which the performance will be accomplished*** (e.g., *Given four sample résumés, [the learner will] develop his/her own résumé*).

Fourth, each objective must include the ***criterion*** on the basis of which satisfactory attainment of the objective will be judged (e.g., *Given four complete résumés, [the learner will] develop his/her own résumé containing complete information in each of the necessary categories as indicated by the samples)*.

Two final points: (1) each statement should contain only one objective, one type of performance; and (2) each statement should be written so that it can be easily understood by both teachers and learners.

In the ***introduction*** component of your lesson plan, you determine how you will acquaint learners with the specified objectives for the lesson. One major purpose of the introduction is to orient learners to (1) what the objectives of the lesson are, (2) how the lesson relates to them, (3) how it relates to their past classroom activities, and (4) what will be expected of them.

Two other functions of the introduction are to get the attention of the learners and to motivate them sufficiently to hold their attention. There are various methods that can be used to achieve these purposes: telling an interesting related story or anecdote, giving a brief demonstration, asking provocative questions, or presenting background information.

Preferably, learners should be involved in the introduction in some way—by suggesting answers to the provocative questions, assisting in the demonstration, sharing their related experiences, or participating in some other form of learner-teacher interaction.

Lesson Development

Once you have determined where you are going and have planned how to introduce this to the learners, you need to determine how to get there. You need to select the most appropriate ***technique*** or ***method*** with which to ***communicate*** the material to the learners, and you need to select the most appropriate ***learning experiences*** via which learners can ***apply*** the material. Many learning experiences are specified in curriculum guides and other instructional materials. By looking in these resources, you can get many good ideas.

Numerous variables determine what is "appropriate." Obviously, your objectives will be the primary basis for selection. As previously mentioned, another determinant is the individual needs, interests, and abilities of the learners. Another is whether you want learners to learn (1) a skill, (2) an idea or concept, (3) an attitude, or (4) a value. What time and resources you have available further limits your choices. Of course, the level of maturity of the learners must also be taken into account. Techniques that are appropriate for adults in a retraining program may be completely confusing to secondary learners.

The following is a list of sample techniques and learning activities:

Audiotapes
Brainstorming
Bulletin boards
Buzz groups
Chalkboard
Committees
Community study
Computers
Debates
Demonstrations
Discovery
Discussions
Displays
Dramatizations
Drill and practice
Exhibits
Field trips/research
Film loops
Films
Filmstrips
Flannel boards
Flip charts
Games
Graphics
Assignments
Illustrated talks
Independent study
Information sheets
Investigation/reporting
Laboratory work
Large-group/small-group instruction
Library research
Listening
Listing or diagramming
Models
Oral recitations
Panels/symposiums
Problem-solving
Programmed materials
Projects
Question and answer
Reading out loud
Real objects
Resource persons
Reviews
Role-playing
Simulations
Slides
Speaking
Step-by-step procedure panels
Supervised study
Team teaching
Television
Transparencies
Verbal illustrations
Videotapes
Visual illustrations
Work-study
Writing

When you have considered all the variables, then you can sort through the techniques and activities, considering the advantages and disadvantages of each in terms of your specified variables. You are not necessarily looking for ***one*** technique and ***one*** learning experience. The use of several techniques in combination can be very effective and can help maintain learner interest And, if learning experiences are selected based on learner needs, interests, and abilities, it should be fairly obvious that several experiences should be prepared to provide for the needs, interests, and abilities of the varied individuals in your class.

The ***content*** or ***subject matter*** or ***concept*** section of the lesson plan is determined by the objectives of the lesson, and the format may vary. Some people plan the content in outline form; others write in paragraph form. Many times, the technique determines how you plan the content.

For example, if you chose the demonstration technique, you would need to list, in detail, the steps of the demonstration in the exact sequence they are to be performed. You would probably also need to include any special safety rules involved in the activity. If you chose instead to give a brief explanation, you would need to outline the information to be explained. If you chose a discussion technique, you would need to prepare a list of key questions to guide the discussion and keep it moving. Remember, the content needs to relate to the achievement of your objectives, and to each individual in your class.

It is appropriate at this point to mention ***resources*** and ***materials.*** These include all the physical tools of the trade: media or audiovisual aids, reading materials, machinery, equipment, tools, supplies, bulletin boards, graphs, and so on. If you refer to the list of techniques and activities, you will see a large number of these aids listed.

Relative to these aids, you have two tasks to complete for the lesson development section of your plan. First, you must ***select*** appropriate aids to support the objectives and content of your lesson. Second, you must ***plan*** to have these aids available. Although this discussion is being presented in the "Lesson Development" section, media and aids can and should be used to support or enhance the lesson during the approach, the development, and the summary. It is being discussed in one place simply to avoid repetition.

When you have determined the resources that would aid learners in meeting the objectives, you need to select and obtain or prepare these resources. They should then be listed in the plan. Back to the recipe analogy: It's easy to try to bake a casserole from memory and then to realize halfway through that you neglected to buy one of the necessary ingredients. With these items listed, you're more likely to be prepared.

Lesson Summary

There are two major activities that occur in this section of the lesson: (1) summarizing the lesson, and (2) evaluating learners' attainment of the objectives. These two activities need not necessarily occur in that order: summary first, then evaluation. There will be times when evaluation will logically precede the formal summary (see samples).

The ***summary*** component is the place in your plan where you determine means for (1) pulling the loose ends together, (2) drawing conclusions, (3) evolving generalizations, or (4) reiterating major concepts. By use of key questions requiring learner responses, you can informally evaluate whether the lesson objectives have been met.

Of primary importance is to relate all that has gone on during the class back to the lesson objectives and to relate again what has occurred to past and future lessons. In other words, the summary should reinforce for learners where they were headed, where they have been, where they should be now and why, and where they will go from here.

The ***evaluation*** component is the tool for determining whether the learners are where they should be now (i.e., have they reached the lesson objectives?). The method of evaluation you select should be based on the types of objectives the learners are trying to achieve. For example, if the goal is for learners to attain competency in performing a skill, a paper-and-pencil test will not measure that performance competency. Instead, you could develop a checklist, observe the learner performing the skill, and rate the proficiency of performance.

Ultimately, you want to relate the assessment measure to the learner's actual job performance so that assessment should be learner-centered, and a collaboration between you, the learner, the course materials, and actual job performance. You will probably be using some traditional assessment—both norm- and/or criterion-referenced tests, in addition to the typical paper and pencil tests. Better, for the workplace learner are alternative assessments such as portfolios, intake and progress interviews, self-evaluations, and simulations.

It is especially valuable for the beginning teacher to indicate beside each activity in the lesson plan how much ***time*** the activity may take. Comparing the estimated time to the actual time used will allow a teacher to make more accurate estimates as time goes on. Time is a vital consideration. Nothing is more uncomfortable or less productive than 15 idle left-over minutes or a lesson cut short prematurely. Good planning prevents these dilemmas from occurring.

Finally, a good plan should have a space for ***notes***. This is another type of evaluative device, but this time it is the plan that is being evaluated. Immediately following the class, you should write down, on the plan itself, any comments or any questions you have relative to the plan and its effectiveness in helping you to achieve your stated objectives. What things worked? What things didn't work? What things didn't get covered? What questions were raised that need further clarification? How accurate were your time allotments for the various activities?

These notes serve two purposes: (1) they can be generalized and thus help you in writing other plans; and (2) should you need to teach the same lesson at a future date, these notes can suggest needed improvements.

It should be noted that there are a great many lesson plan formats, each one touted by its author as having superior qualities. Regardless of the specified names given to the various sections of the plan, what is important is that all components are, in fact, included.

Sample Lesson Plan Format: Workplace Communications Strand

DACUM Task Reference: 14.0 (pack products), 14.1 (follow pack spec)

Learning Objectives Addressed	**Learning Activities**	**Learning Materials**
Work context: *Given x number of parts and packing material*	Reading: *Read routing sheet* Writing: *See follow-up* Oral Language: *Discuss*	*Routing sheet* *Pencil* *Paper*
Task to perform: *pack x number of parts*		
Performance outcomes: *parts packed will not be damaged and will be packed in proper alignment at plant*		

Skills highlighted: *Locating information on a form (LTA 1.1, 3.1)*

Literal comprehension–following detailed, sequential directions to complete a task (LTA 1.2, 3.2)

Prereading: *Discuss: What are routing sheets? Why are they used? Where do they originate? Who writes them up? Where in the plant are they routed to? Etc.*

Reading: *Read over the routing sheet, numbering the stops or places the parts go to.*

Postreading: *Finding the place which gives packer directions, number the steps the packer is directed to take.*

Learner Follow-up	**Instructor Follow-up**	
	This lesson	**Next lesson**
Rewrite the packer directions on the routing sheet to be clearer–use better sentences, easier whole words (not abbreviations). Pretend you need to tell me how to pack the parts. *Optional: Pretend you are a machine part and write a story telling where you would go and what would happen to you on the job.*		

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Sample Lesson Plan Format: Workplace Mathematics Strand

DACUM Task Reference: 7.0 (prepare production charts); 7.2 (collect data—count and measure)

Learning Objectives Addressed	Learning Activities	Learning Materials
Work context: *Given time for last part produced and first acceptable part*	*Calculating transition time from data* *Brainstorming additional workplace subtraction scenarios (informal oral and written communication)* *Computing by hand and with calculator*	*1. Transition time self-check from Charting Easy Book (p. 37) changed to reflect no fractions of an hour* *2. Machinist scenarios (8 & 9)* *3. Subtraction problems*
Task to perform: *calculate transition times by subtracting whole numbers*		
Performance outcomes: *with 100% accuracy*		

Skills highlighted: *Subtracting whole numbers*

Identifying the purpose: *Read p. 36 of* Charting Easy. *Discuss importance of subtracting accurately in collecting data for charting.*

Selecting an approach: *Work through machinist scenarios and brainstorm additional work situations using subtraction as a skill.*

Gathering needed data: *Work through problems on p. 37 (transition time). Learner provides 5-10 new work-related subtraction problems.*

Calculating: *Perform work-related subtraction problems using pencil and paper. Perform additional skill practices (Machinist 8 & 9).*

Checking the solution: *Verify solutions to work-related problems. Learner verifies answers to practice problems using calculator.*

Learner Follow-up	Instructor Follow-up	
	This lesson	**Next lesson**
Use Job-Related Basic Math *computer program for additional practice*	*Provide additional explanation of subtraction skills. Ensure capability of 100% accuracy.*	

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"WORKPLACE LITERACY LESSONS: FROM LITERACY AUDIT TO LEARNER" by J. DeStefano
Journal of Reading v36/n2 (October 1992): 132-134
© 1992 by the International Reading Association. All rights reserved.

In our workplace literacy program—a joint partnership between faculty and staff of the College of Education, the Inland Fisher Guide division of General Motors, and the United Auto Workers Union Local 969—Sandra Pritz, Verna Terminello, and I devised a lesson plan format for two major curricular strands: communications and math. The communications strand was based on an integrated approach to oral communications, reading, and writing. The plan provides for language and literacy activities, a literacy skills section including metacognitive skills, pre and post-reading/writing activities, and a section for both teacher and student follow-up. The lesson based on this plan was a crucial component in the curricular chain from the "diagnosis" of literacy needs in a workplace to working with a specific student.

In our project, this chain began with a DACUM (acronym for ***D****eveloping* ***a*** *C*urricul***um***) which was done with selected workers in the plant for the job of All-Purpose Operator (APO), a new job configuration that was called for by synchronous manufacturing of auto body parts. The DACUM procedure yields a series of "duties" which are then broken further into component tasks, each of which is numbered.

Thus, at the very top of the lesson plan form (see end of reading) the DACUM Task Reference is entered to indicate how that lesson plan is clearly tied to an on-the-job task, not to some generic job skill as commonly found in published material.

After the DACUM was completed, some of us did literacy task analyses of many of the duties revealed by the DACUM. For each subjob within the APO category, such as packer (of auto parts), and for each job duty (such as "pack parts"), the subtasks were identified in a from-start-to-finish manner. For each subtask, literacy skills embedded in the job were identified, including higher order metacognitive skills. These skills formed the pool from which were more specific skills were drawn from each lesson and written out in the "Skills highlighted" section.

To determine which employees might benefit from instruction on the literacy skills identified by the analysis, the teacher conducts a diagnosis. After needs are identified, plans are created by the teacher or collaboratively by the teacher and student.

At the top of each lesson plan are three categories: (1) learning objectives addressed, (2) learning activities, and (3) learning materials (see plan at end of the reading). The objectives come from the teacher's and student's knowledge of what needs to be accomplished by the employee. For example, performance outcomes might be "parts packed will not be damaged and will be packed in proper alignment at plant."

For each lesson, reading, writing, and oral language activities are created. These are based on job tasks, skills, and actual job materials revealed by the literacy task analysis. These activities are usually integrated, often with the math strand which has the same category in its format. The activities emphasize self-questioning to promote awareness of the reading process and on-the-job reading demands while the employee is working with the materials. We also try to include as much reading and writing of continuous text as possible, although some job tasks don't include continuous text.

The third part of the lesson plan may look exclusively geared to reading, but it isn't in practice—it just focuses the teacher's attention on these critical elements. The oral and written aspects of the communications strand are integrated with reading at this point. The "Before reading" directions help the employee activate schema to provide a cognitive framework for what follows, which is enhanced by the employee's knowledge of the job itself. This is accomplished in a variety of ways in our lessons where the reader may skim, predict content, and so on. "While reading" is designed, in part, to help the student keep in mind the purpose for reading or writing, to check predictions, and so on. "After reading" is a crucial part of each lesson, designed to help the student employ a variety of strategies such as clarification, self-questioning, summarizing, and monitoring their reading strategies.

This middle section looks quite different for lessons in the math strand. Included there are identifying the purpose, selecting an approach, gathering needed data, calculating, and checking the solution as the steps in each lesson.

At the bottom of each lesson plan is a crucial section which not only provides for practice by the student, but also links the various lessons together into the larger unit encompassed by the job itself and the skills needed to perform it well. The "Learner follow-up" portion can be determined by the teacher before working with the student in conjunction with the student. It often includes having a student write in a journal and rewrite various job materials such as routing sheets and spec sheets. It also can include practice activities such as more reading or related materials.

After the lesson, the teacher fills in "Instructor follow-up" on the form. "This lesson" is a place where she or he can critique and note the need for more work on a specific skill or strategy. Under "Next lesson," the teacher includes something that ties the lessons together into a coherent unit. This last is important to our emphasis on individualized educational plans for each student.

This format for lessons plays a central role in our ability to deliver a quality workplace literacy program in a company which heavily emphasizes quality in all aspects of its manufacturing process. I'd argue that such a format is applicable to virtually any employment setting, because it enables teachers and students to create a curriculum that can close the gap between the demands of the jobs and the skills of the employees.

Note: I would like to acknowledge the help of the three instructors in our project, Janet Collins, Patricia Connor, and Margaret Girkins, whose feedback and implementation were an important part of the creation process.

Sample Lesson Plan Format: Workplace Communications Strand

DACUM Task Reference: 14.0 (pack products), 14.1 (follow pack spec)

Learning Objectives Addressed	Learning Activities	Learning Materials
Work context: *Given x number of parts and packing material*	Reading: *Read routing sheet* Writing: *See follow-up* Oral Language: *Discuss*	*Routing sheet* *Pencil* *Highlighter* *Pencil* *Paper*
Task to perform: *pack x number of parts*		
Performance outcomes: *parts will be quickly packed, not damaged, and in proper alignment at plant*		

Skills/processes: highlighted: *Recognizing/comprehending abbreviation (LTA 1.3—sets up packing routine; 3.3—packs parts); improving vocabulary skills; improving metacognitive skills (promoting awareness of task or recognizing/understanding abbreviations)*

Before reading: *Discuss: Why are abbreviations used? What are some common abbreviations you use every day on the job? What are the abbreviations used in the packer job? Elsewhere? What are some problems abbreviations might or do cause? Have they caused problems for you? (Setting purposes; activate schema; What I know, What I don't know)*

While reading: *Skim through the routing sheet and the spec sheet. Read through them again more slowly and highlight all abbreviations. (Study method—to develop metacognitive strategy awareness)*

After reading: *Discuss and write out the words the abbreviations stand for. Arrange a key to the abbreviations used. How do they help on the job?*

Learner Follow-up	Instructor Follow-up	
	This lesson	**Next lesson**
Journal assignment: For several days, keep a diary of all abbreviations you encounter at work, in the home, and elsewhere. Write down the words the abbreviations stand for and explain how you figured out the "codes" (metacognition).	(After lesson is done)	(After lesson is done)
	Long range: Group creates a glossary of plant abbreviations.	

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Reflection on Reading 2

- What are the differences between lesson objectives you will write for learners in the workplace and lesson objectives you may have written in other instructional settings?

- How can you be sure that your instruction follows a continuous learning chain from a real work task through your learner's class outcomes?

- What instructional resources are appropriate to support workplace literacy lessons? What do you do if there are no "texts"?

- Suppose a trainer examined your lesson plan and was upset because he thought you were doing his job. What would you say to him/her?

- Look at the sample lesson plan formats in the reading. What are the different ways you can file these plans so they can be easily accessed for use in developing *different* types of literacy skills?

Improve Teaching Effectiveness Through Planning and Evaluation

At a time when you will be teaching an actual workplace literacy class, complete the following tasks:

- Prepare a workplace literacy lesson designed to meet the needs of the learners in the class.
- Present the lesson.
- Gather feedback from the learners and other clients/stakeholders on the lesson's effectiveness.
- Specify how the lesson or your teaching practices should be modified based on the feedback gathered.

If you are not an inservice teacher, try to arrange—on your own or through your resource person—to "borrow" the class of an active workplace literacy teacher to complete this activity and acquire some on-the-job experience.

TOPIC: Improve Teaching Effectiveness Through Planning and Evaluation

Evaluation Guidelines

Directions: Check your competency with the following criteria:

Learner Self-Check Did you—		Review Checklist Did the learner—
☐	1. Create a lesson plan that includes all standard elements (lesson approach, development, summary, task and literacy skill references)?	☐
☐	2. Target lesson content to the varying needs and abilities of the learners?	☐
☐	3. Identify all the clients/stakeholders who should be involved in providing program evaluation?	☐
☐	4. Define the assessment needs of each client/stakeholder group?	☐
☐	5. Select/develop evaluation instruments and activities that gather information about your teaching effectiveness from the various perspectives of the program's clients?	☐
☐	6. Analyze the feedback to determine areas requiring modification or improvement?	☐
☐	7. Identify specific ways to adjust the lesson plan and your performance to better meet the needs of clients/stakeholders?	☐

Learner: ______________________

Reviewer: ______________________

Level of Performance: If the evaluation results indicate a need for further competency development—or if the learner wishes to pursue the topics covered in further breadth or depth—please refer to the supplementary resources described in the Annotated Bibliography, which follows.

Annotated Bibliography

Askov, E. N., and Van Horn, B. J. "Adult Education and Workplace Literacy: Designing Customized Basic Skills Instruction." *Adult Basic Education* v3/n2 (Summer 1993).

> This article provides suggestions for adult educators that can be used in designing customized basic skills instruction using work-related reading materials.

Askov, E. N. "Curriculum Design for Workplace Literacy." *Adult Learning* v3/n8 (June 1992): 12-13.

> Provides suggestions for designing custom-made basic skills instruction using work-related materials.

Dowling, W. D.; Pritz, S. G.; DeStefano, J. S.; Imel, S.; Puleo, N. F.; Girkins, M.; Collins, J. H.; and Connor, P. M. "Workplace Literacy for World Class Manufacturing." Final Report. Columbus, OH: College of Education, The Ohio State University; Inland Fisher Guide Division of General Motors; and UAW Local 969, 1992. (ED 347 302)

> Describes curriculum/instructional development process using metacognitive and whole language approaches. Contains formats for developing lessons in mathematics and communication skills using these approaches as well as lesson plans and job context instructional materials used to implement lessons.

Hutton, B. *A Manual for Writers of Learning Materials.* Cape Town, South Africa: Cape Town University, 1990. (ED 356 405)

> This workbook is designed to present the process of developing instructional materials to persons who want to write teaching material for a specific and defined readership group. Developed by many people in various educational organizations who have writing and editing experience, it is especially relevant for writing teaching materials for adult basic education as well as for an audience for whom English is a second language. The manual is organized in six chapters: (1) before you start writing (audience, resources, materials, objectives); (2) start planning and writing; (3) writing to be read; (4) language, style and tone; (5) illustrations and samples from lesson plans and other instructional materials.

Jurmo, P. *Re-Thinking How to Plan and Evaluate Workplace Education Programs: Innovations in New York State.* Jersey City, NJ: Literacy Partnerships, 1993. (ED 362 643)

> Reports on the results of state-funded workplace education programs in New York state to identify ways of improving program planning and evaluation methods. Identifies possible future actions in the areas of staff development, collaborative site-level planning and evaluation, and collaborative statewide policy development.

Kalman, J., and Fraser, K. L. *Opportunities Lost and Lessons Learned: Inside a Workplace Literacy Program*. Berkeley, CA: National Center for Research in Vocational Education, University of California at Berkeley, November 1992. (ED 352 453)

> This report on a union-sponsored workplace literacy program conducted in a large metropolitan hospital, addressed such questions as What were the educational goals of program planners and how did they envision the realization of these goals? What were the underlying assumptions about students, learning, and work that drove their plans for the program? and What were the factors that shaped the implementation of the educational model and how did the model evolve?

Leidia, J. et al. *The Competitive Edge: Sharpening Your Skills in the Workplace*. Austin, TX: Extension Instruction and Materials Center, University of Texas, 1993.

> Series includes *Mathematics*, Student Edition and Instructors' Guide (ED 356 431 and ED 356 432); *Communications*, Student Edition and Instructors' Guide (ED 356 429 and ED 356 432). An *Administrator's Guide* by Elaine Shelton is also available (ED 356 428). Together these materials cover the administrative and instructional aspects of organizing and conducting a workplace literacy program. Communications series emphasizes problem solving and decision making and mathematics program is a refresher course that uses a functional workplace context.

Manley, D. *Workplace Education Design Checklist: A Tool for Program Planning*. Madison, WI: Center on Education and Work, University of Wisconsin-Madison, 1994. (ED 367 900)

Manley, D. *Workplace Education Evaluation Checklist: A Tool for Assessing and Improving Performance*. Madison, WI: Center on Education and Work, University of Wisconsin-Madison, 1994. (ED 367 899)

> These two checklists are designed to be used as aids in workplace education programs. Each consists of a series of statements that can be completed by the workplace education management-labor-education partnership team. The evaluation checklist includes effectiveness indicators.

Richardson, J. S., and Harbour, K. "These Are a Few of Our Favorite Things." *Lifelong Learning: The Adult Years*, v6/n1 (September 1982): 18-19, 31.

> Describes a lesson plan model for teaching adults to read. The four phases of the model (reading to the student, silent reading, oral reading by the student, skills work) are presented, their significance explained, and activities and references provided. An annotated bibliography follows the model.

Saumweber, J. et al. *ESL Workplace Literacy Curriculum for a JTPA/Family English Literacy Demonstration Project*. St. Paul, MN: Lao Family Community of Minnesota, Inc, [1991]. (ED 339 248)

> Describes the curriculum portion of a program designed to assist refugees with limited English proficiency to become economically self-sufficient as quickly as possible. Four levels of instruction are offered and content includes workplace field trips, workplace appropriate behavior, emphasis on workplace language and basic literacy skills taught in other program courses, and curriculum adaptability to different jobs. Includes key competencies and instructional units.

Schlenker, R. M. "Planning Training Sessions That Start, Go and End Somewhere." Unpublished teacher's guide on lesson planning, USCGR Far East Office, Yokota AB, Japan, October 1986. (ED 276 837)

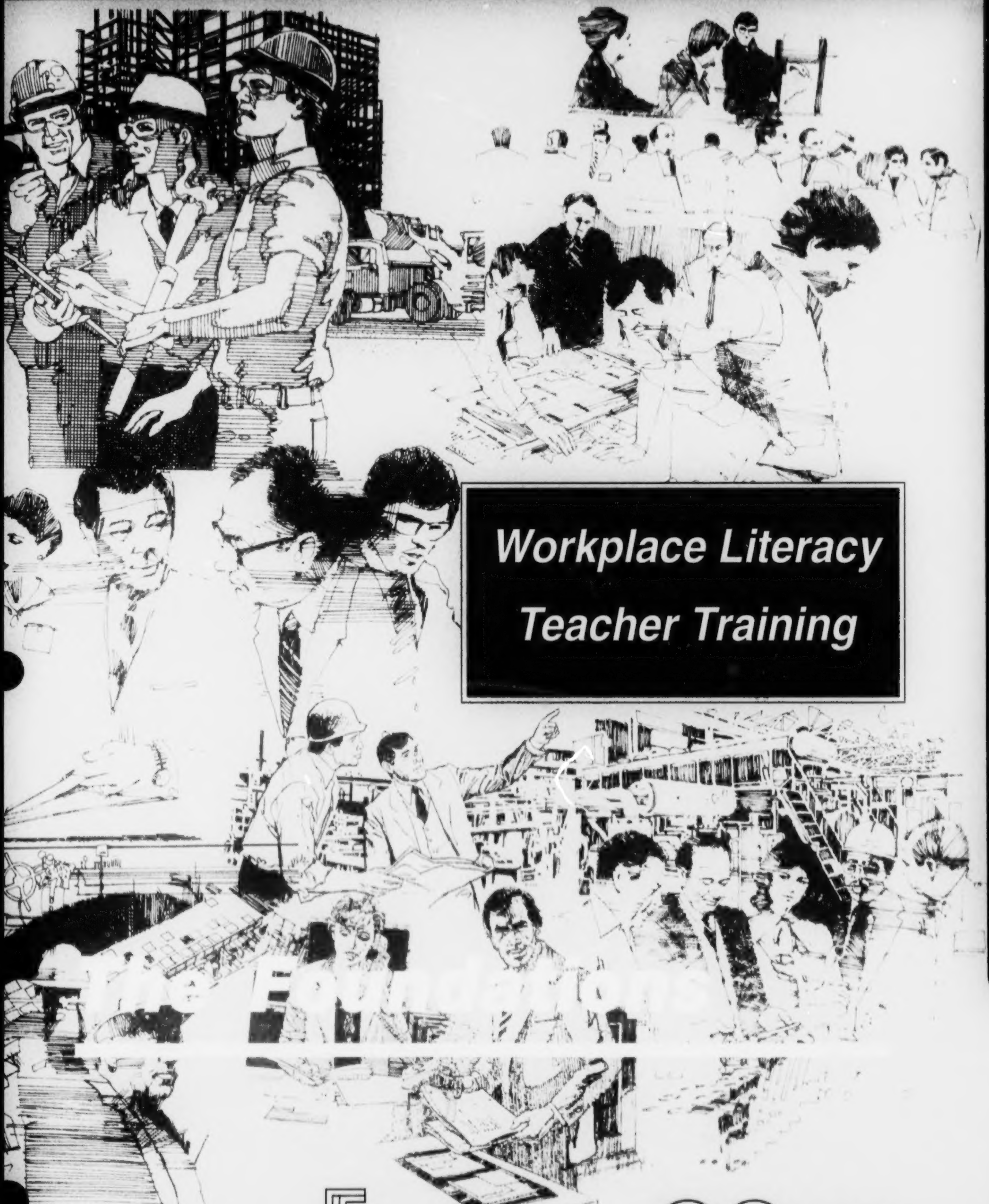
> Well-developed lesson plans form the basis of successful training sessions. Each lesson plan has two parts: a cover sheet and a lesson outline. Cover sheets include a variety of information used when an instructor drafts a lesson outline and prepares to conduct a training session. Sections are: course, unit, and lesson titles; presentation time; presentation methods; terminal performance, enabling, and general objectives; evaluation; references; materials required; and safety precautions. Lesson plans, the instructor's guide and crutch, have three subdivisions: introduction (title, objectives, evaluation, presentation overview, value of the presentation), presentation (outline of lesson) and summary.

Toney, M. R. "Lesson Plans—Strategies for Learning." *Training and Development* v45/n6 (June 1991): 15-18.

> A good lesson plan has an introduction, body, opportunity for questions, and summary. These components are bound together with time cues, media cues, practice and provide-help paragraphs, instructor's notes, and transitions. Motivational principles guiding lesson plan development are relevance, conceptual framework, learning outcome, method, evaluation, and primacy or recency.

Waugh, S. *An Organizational Approach to Workplace Basic Skills. A Guidebook for Literacy Practitioners*. Ottawa, Ontario: Ottawa Young Men's and Young Women's Christian Association, 1992.

> Developed to assist deliverers of community-based programs to workplace initiatives, this guidebook takes into considerations geographical, cultural and organizational differences. Supports a high-skill approach to workplace education.



Workplace Literacy Teacher Training

COLLEGE OF LAKE COUNTY

CENTER ON EDUCATION
AND TRAINING FOR EMPLOYMENT
COLLEGE OF EDUCATION
THE OHIO STATE UNIVERSITY

Literacy Resources

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Create Literacy Resources Using Workplace Materials

Introduction

"The process of learning to read is one in which the reader gradually makes sense of more and more kinds of language in more and more contexts, a process that is fundamentally a matter of experience."[1] The same type of statement might be made about any literacy task: learning to write, speak, compute, or solve problems in general. In a workplace literacy program, the experience required is job-related. For learners to learn to perform the literacy tasks of the job, they need to work with the materials of the job. One of the most important sets of foundational skills in the workplace is the ability to handle written materials utilized by the company

This learning guide is designed to help you think about how to take the materials gathered from the workplace during the job and literacy task analyses and use them as a basis for literacy instruction and for building your program's curriculum.

Objectives

- Identify (1) types workplace materials you might select for your program, (2) steps you could take to minimize learner anxiety in relation to cloze tests and grade level scores, and (3) program plans for structuring and supporting the curriculum development process.
- Begin to build a file of information about supplementary workplace literacy resources and to create literacy resources using workplace materials (i.e., match materials to the objectives, assess the reading level of the materials, develop one or more cloze tests using the materials, and plan how you will use those tests for diagnostic and instructional purposes).

To Help You Meet the Objectives

- Study the material that follows:

Reading 1: Developing Curriculum from Workplace Materials
- Gather Workplace Material
- Match Material to Objectives
- Assess Reading Level of the Material
- Identify Alternative Curricular Material
- Develop Learning Activities (cloze procedure)

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[1] A. Fingeret and P. Jurmo, eds., *Participatory Literacy Education* (San Francisco, CA: Jossey-Bass, 1989), p. 19.

- Reflect on the questions posed after the reading. The questions are designed to help you clarify and extract meaning from the reading that can be helpfully applied. There are benefits to both individual and interactive reflection—
  - As an individual, consider how you would apply the information either in the program to which you are already assigned or in a program to which you might be assigned.
  - If you are able to discuss these questions with other instructors or program staff, try to get other perspectives on the reading. Compare notes on the ways the ideas can be and have been applied in their experience. If the experiences differ, help each other probe the possible reasons for the differences.
- Complete the Application Activity.
- Evaluate your own competencies using the Evaluation Guidelines. This is an opportunity to assess your own learning and identify any areas in which you feel less competent or confident. If indicated or desired, take advantage of the opportunity to review the related material in the Annotated Bibliography. You may also want to seek out a more experienced person who can be a mentor to you on this topic, helping you assess your competency and acting as a resource person.
- Ask your reviewer to evaluate your skills also. Be sure to note the input from the reviewer that can provide the basis for your further competency building.

To Help the Reviewer Guide and Evaluate Learner Performance

These learning guides have been designed to allow for maximum flexibility of use. For those individuals using them for professional development (without ties to a formal program), the guides allow for self-study. Such use may, however, limit the opportunity for interaction and practice in a group setting. Therefore, if learners are completing these guides in a group setting under your direction, it is strongly recommended that you identify such opportunities and capitalize upon them.

Reflection questions at the end of each Reading and an Application Activity and Evaluation Guidelines at the end of each learning guide provide opportunities for you, as a reviewer, to monitor learner progress and evaluate learner performance on the workplace literacy knowledge and skills being developed. However, your expectations should be based somewhat on the learner's background (e.g., previous instructional experience) and the learner's progress in the program. Individuals with previous experience as instructors in workplace literacy programs should be expected to extend their thinking and activities beyond the level expected of those without such experience.

For example, if the learner is asked to "define company culture," individuals ***without*** instructional experience would be expected to respond solely on the basis of their reflections concerning the readings provided within the guide. The responses expected of individuals with instructional experience, however, should go beyond the readings, incorporating their real-world experiences as well. Likewise, as individuals complete more and more of the learning guides, their work should reflect that progress. Knowledge and skills gained in earlier guides should be ***integrated*** into their reflections and activities as they work through later guides.

Flexibility can also be provided concerning how the learner will demonstrate competency. At a minimum, the learner should submit ***written*** descriptions, definitions, and explanations to demonstrate successful completion of the Application Activity. These should be evaluated—by both you and the learner—using the criteria provided in the Evaluation Guidelines. If feasible, however, you should also arrange to meet with the learner to discuss his or her written documentation. At that time, you could also pose hypothetical or actual situations related to the skill criteria and ask the learner how he or she would handle those situations. Another possibility would be to ask individuals to perform the skill as part of a presentation or demonstration to others in the class or group.

It is also desirable that, whenever possible, you and the learner identify opportunities for expanding on the learning experiences presented in the guide—ways for the learner to apply the learning more deeply and broadly. The question, "What plans do you have for learning more about the skill covered in this guide?" could well be a standard one. In many cases, the learner can use his or her work in the Application Activity as a building block for further exploration.

In summary, the learning situation is not one in which strict criterion-referenced standards based on percentage attainment or mastery levels are suitable, nor would one mode of demonstration be feasible—or appropriate—for everyone. You and the learner should discuss and reach agreement in advance on the level of achievement expected and mode of demonstration to be used so as to create the optimal learning experience. The intent is for the learner's professional development to be competency-based, rigorous, and designed to motivate further learning, yet sensibly adapted to the situation and to the learner's needs and abilities. Hopefully, the learners will carry this flexible philosophy and approach into their own workplace literacy programs.

Developing Curriculum from Workplace Materials

To develop curricular materials for a workplace literacy program typically involves the following steps:

- Gather material from the workplace
- Match material to literacy task objectives (enabling objectives)
- Assess reading level of the material
- Identify alternative curricular material needed to serve learners' needs
- Develop learning activities which are based on the material and which will lead to achievement of the literacy task objectives

Gather Workplace Material

To create a functional-context curriculum for a workplace literacy program, you need to use materials from the job site itself. A variety of materials should have been gathered during the job and literacy task analysis processes. Some will relate to the technical skills of the occupation; e.g., manuals of different types, specifications, blueprints, job aids, computer printouts, memos. Others will relate to the employment situation; e.g., policy manuals, documents describing job benefits, travel orders, union contracts, bulletin board announcements, safety signs.

Be aware that some materials may be considered proprietary or confidential in certain departments or companies. If this is the case, be sure to obtain permission before using them—or ask if a generic sample could be filled out for you to use. Mark any proprietary materials as such, with a note requesting that they not be removed from the premises.

Match Material to Objectives

Development of curricular materials needs to start with a focus on the objectives to be achieved. These include performance objectives, which describe technical tasks to be performed on the job, and enabling objectives, which describe literacy tasks involved in the performance of job tasks. You need to start by reviewing those objectives and the materials gathered. Once you have a sense of what is to be achieved and what materials are available, you can begin to match materials to objectives. For each objective, search through materials and flag documents or passages from documents that could be used in achievement of the objective.

For example, if a literacy task objective involves using *charts* to secure needed information, you need to look in the workplace materials for charts that workers use on the job. If the objective specifically relates to the use of *keys* in chart reading, you need to find charts that include keys.

In many cases, this should be a straightforward process deriving from the job task. It is a simple matter of determining what materials the worker uses in performance of the job task. Does the worker need to refer to and interpret specifications? review safety procedures? follow the steps listed in a job aid? If so, you need to make sure you have copies of those materials to use as a basis for instruction.

In other cases, there will not be specific job materials for a literacy task. If, for instance, the literacy task involves calculating circumference, it is unlikely that nice, neat math problems requiring that skill will be available on paper to carry away from the job. In that case, job-related scenarios will probably need to be developed for use in teaching the skill.[1]

Assess Reading Level of the Material

Each of these materials is written at some level of difficulty. These levels are typically called ***reading levels***, which are usually classified according to grade levels (e.g., from Grade 1 to Grade 21, with the latter referring to postgraduate material that is usually full of occupation-specific jargon and quite difficult to read). For adults, specifying grade levels is not always very useful, but that is what is typically done at present, and it does give you and the learner a rough idea of the difficulty of the material.

Knowing the reading level—according to a grade level—of the materials that learners in your workplace literacy program must read on the job is important for other reasons as well. For one thing, the level at which workers presently read, expressed as a grade level, is typically determined during the intake or preassessment process. By assessing the reading level of the materials to be read, you can determine whether individual learners can handle those materials.

Matching learners' abilities to appropriate reading materials can be important. When learners try to read material that is much too difficult for them, it can be so frustrating that they don't persevere. Thus, if the job material is too difficult, you will first need to find material they can read and then work with them on ***improving*** their reading ability. So you do need to know the reading level—always an approximation—of the materials at your site in order to plan your curriculum and work with the individual learners.

Bear in mind that workers' reading level scores on generic literacy tests are also an approximation. Research has sometimes shown that workers can read workplace materials of a higher reading level than shown on their assessments; i.e., they have become more proficient at reading job materials than in reading other materials.

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[1] Using workplace ***situations*** to create instructional materials—called scenarios—is covered in another learning guide in this series, *Assess Learner Performance*.

How do you determine the reading level of workplace materials? There are many complex and time-consuming formulas one could apply to determine reading levels. However, you're in luck, because the formula that many consider to be the most valid for technical materials of the sort found in the workplace—the FORCAST—is also one of the most simple. That means it won't take you much time at all to sample from the material at your site to develop an excellent idea of what the levels are.

The formula for the FORCAST—developed by ***Fo***rd, ***Ca***ylor, and ***St***icht—can be stated as follows:[2]

$$\text{U.S. grade level} = 20 - (\text{NOSW} \div 10),$$

where NOSW is the *number of one-syllable words* in a 150-word passage.

To apply the formula, complete the following steps:

- Select several passages from a manual or other job materials (e.g., draw samples from the beginning, middle, and end of the text).
- Count a 150-word section from the first passage, and count the number of one-syllable words in it.
- Divide that number by 10 and subtract the result from 20 to get the grade level.

For example, assume that a 150-word passage has 57 one-syllable words. The calculation would be as follows: $57 \div 10 = 5.7$, and $20 - 5.7 = 14.3$. Thus, the reading level is approximately grade level 14, which can mean college- or technical college-level material. This is a much more valid figure than most of those used to determine reading level.

Repeat this process with the other passages. If you come up with different reading levels for the passages sampled, you can average them to determine the overall reading level for the material.

Identify Alternative Curricular Material

Although the focus of instruction should remain on the materials of the job, learners who need a great deal of remedial help may benefit from the availability of additional materials designed to provide help in particular literacy skills. Given the interest in workplace literacy and Tech Prep, there are probably more occupational-related literacy materials available (or soon to be available) than in earlier years. Check ***commercial publishers,*** particularly those whose materials address adult education, literacy instruction, and/or academic-vocational integration; ***literacy organizations*** (e.g., Literacy Volunteers of America, Laubach Literacy Action); articles in ***journals*** targeted to the workers in the occupation; materials produced by the ***professional organization or union*** to which workers in the occupation belong; and local, state, and national ***curriculum development units or clearinghouses.*** For example:

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[2] T. G. Sticht, *Reading for Working: A Functional Literacy Anthology* (Alexandria, VA: Human Resources Research Organization, 1975), p. 28.

- State-funded vocational curriculum laboratories
- National Network for Curriculum Coordination in Vocational and Technical Education (NNCCVTE), with a state liaison representative in each state department of education
- Educational Resources Information Center (ERIC) Database—The ERIC system includes 16 clearinghouses that acquire, select, and process research, instructional, and related information; one of these clearinghouses focuses on adult, career, and vocational education—including literacy issues. An adjunct ERIC Clearinghouse focuses specifically on ESL literacy issues.
- Annotated bibliographies of literacy materials—For example, as part of Ohio's Tech-Prep initiative, commercial and noncommercial print and audiovisual materials related to academic-vocational integration were identified and screened. Materials surviving the screening process are included in the bibliography as recommended potential resources for Tech Prep programs (available on a cost-recovery basis from CETE/OSU).

Once again, bear in mind that it is not appropriate to select general literacy materials and develop instruction around them. Instruction starts with the objectives to be achieved—objectives that derive from the literacy tasks of the ***workplace***. Supplementary materials (i.e., non-workplace materials) must be compatible with those objectives. They should also be evaluated for their suitability. According to one source—

> You may use published materials as part of the core curriculum, to reinforce instruction, to serve as a resource guide, or to provide enrichment. To gauge the suitability of published items, some things to consider are—
>
> - Intended use of the material
> - Reading level of the material
> - Instructional delivery method
> - Extent to which subject matter is covered
> - Price of material[3]

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[3] Adapted from L. Mikulecky, D. Henard, and P. Lloyd, *A Guidebook for Developing Workplace Literacy Programs* (Bloomington, IN: Indiana University, School of Education, 1992), p. 43. (ED 348 580)

Develop Learning Activities

Much of what you need to know about using workplace materials to develop specific instructional materials covering reading, writing, speaking, listening, computation, and calculation skills is covered in other learning guides in this series (those covering strategies for communication, mathematics, reading, and ESL instruction). In this guide, let us focus on one procedure—the cloze—that allows you to turn workplace materials quickly and easily into relevant and effective instructional materials.

The ***cloze procedure***[4] was designed to measure learners' comprehension of written material. Its advantage is that it uses the actual material to be read. Thus, if you wanted to know whether the learner could read a particular job manual, you could devise a cloze procedure using one or more passages from that manual. Basically, a cloze test involves selecting a 250- to 300-word passage of text and deleting every fifth word. The learner is then asked to supply the 50 missing words.

A simplification of the cloze procedure is presented on pp. 10-11.

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[4] The term *cloze procedure* was first used by Wilson Taylor in 1953 to indicate a connection with the concept of *closure* in Gestalt psychology (i.e., our tendency to see incomplete figures as complete ones).

Using the Cloze Procedure

Follow these rules and steps in using the cloze procedure.

A. Selecting Samples

1. Select three passages, which learners have **not** read, from different parts of your material.
2. Do **not** start in one major section of the material and end in another.
3. Choose passages that do **not** contain many numerals or mathematical symbols.

B. Deleting Words

1. Leave the first sentence intact. Thereafter, delete every fifth word until you have deleted 50 words. Then leave the last sentence intact.

   NOTE: Following this step can produce a test that is quite difficult for less capable readers. Thus, for workplace literacy programs, it is often preferable to delete every ***ninth*** or ***tenth*** word and to leave ***several*** of the first and last sentences intact.
2. Count as a word anything set off with spaces before and after. For hyphenated words, count the parts of the word separately if both parts can stand alone as words (e.g., *self-image*). Count the parts as one word if one part can't stand alone (e.g., *co-worker*).
3. Count a number (e.g., *1,260*) as one word.
4. Don't delete punctuation surrounding the deleted word. Don't delete hyphens. Do delete apostrophes in deleted words.

C. Preparing the Test

1. Type the passages, with the instructions shown in the following example. Replace each deleted word with a 15-space underline.
2. Leave a space before and after each blank. Leave no space between a blank and the punctuation that follows it (or the hyphen that precedes it).
3. Type the passages double-spaced or space-and-a-half. Follow original paragraph indentations and margins.

D. Giving the Test

1. Read the instructions shown in the example aloud while the learners read them silently. (After learners have had experience with these tests, this usually becomes unnecessary.)
2. Have learners read the passage through one time and then start guessing at the missing words and filling in the blanks the second time through.
3. Don't put a time limit on the test.

E. Scoring the Test

1. Score the number of correct responses in each passage. Score a response as correct only when it exactly matches the deleted word.
2. Score responses as correct if they have minor spelling errors, as long as they are otherwise correct.
3. Score responses as incorrect if plural or tense endings are wrong (e.g., *job* for *jobs*, *work* for *worked*).

F. Evaluation of Scores

1. There are various ways to evaluate cloze scores. The simplest, for your purposes, is the following:
   - 70% and above = *independent reader*

     The learner has no difficulties with comprehension; can handle the materials without special assistance.
   - 40% to 70% = *instructional level*

     The learner reads with about 75 percent comprehension; may need assistance occasionally.
   - 40% and below = *frustration level*

     The learners comprehends less than half the content; needs major help or different materials.
2. If a learner's scores on the three samples are very different, it may indicate the material varies considerably in difficulty. In that case, you will need to be alert to trouble spots in the material and offer help as needed.

Cloze Instructions

At the bottom of this page is a sample of a new kind of test. Each of these tests is made by copying a few paragraphs from a book. Every fifth word was left out of the paragraphs, and blank spaces were put where the words were taken out. ***Your job will be to guess what word was left out of each space and to write that word in that space.*** It will help you in taking the test if you remember these things:

- Write only **one** word in each blank.
- Try to fill every blank. **Don't be afraid to guess.**
- You may skip hard blanks and come back to them when you have finished.
- Wrong spelling will not count against you if I can tell what word you meant.
- Most of the blanks can be answered with ordinary words, but a few will be—
  - ~ numbers like *3,427* or *$12* or *1954*
  - ~ contractions like ***can't*** or ***weren't***
  - ~ abbreviations like *Mrs.* or *U.S.A.*
  - ~ parts of hyphenated words like *self-* in the word *self-made*

Sample Test

Below is a sample of one of these tests. Fill each blank with the word you think was taken out. You may check your paper when you finish by looking at the answers that are written in the box at the top of the next page. Write neatly.

The Beaver

Indians call beavers the "little men of the woods." But they aren't really (1)______________very little. Most beavers (2)______________ to be three or (3)______________ feet long and weigh (4)______________ 30 to 40 pounds. (5)______________ "little men of the (6)______________" are very busy most (7)______________ the time. That is (8)______________ we sometimes say, "as (9)______________ as a beaver."

Beavers (10)______________ how to build dams (11)______________ can hold water. They (12)______________ their two front paws (13)______________ do some of their (14)______________. Cutting down a tree(15) ______________ their four sharp-pointed (16)______________ is easy. The average (17)______________ can cut down a (18)______________ four inches thick in (19)______________ 15 minutes.

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Answers: (1) so; (2) grow; (3) four; (4) from (5) These; (6) woods; (7) of; (8) why; (9) busy; (10) know; (11) that; (12) use; (13) to; (14) work; (15) with; (16) teeth; (17) beaver; (18) tree; (19) about.

The cloze procedure can also be modified in a number of ways according to a Penn State literacy team:[5]

- Delete content words only (nouns, verbs, adjectives, adverbs). This type of modification has been used successfully with language experience material when students were given a master list from which to choose.[6]
- Leave more text intact and delete fewer words (e.g., 25 items instead of 50).
- Leave more text between deletions (e.g., delete every tenth word rather than every fifth word).
- Accept other appropriate substitutions, instead of exact words.[7]
- Provide multiple choices for each blank, rather than expecting the learner to generate the correct word.
- Provide a master list of words from which the learner can choose.
- Provide the first letter for each omitted word.
- Provide a blank that indicates the exact number of letters for the desired word (i.e., if the word has four letters, provide a blank as follows: _ _ _ _).

The cloze procedure can also be an extremely effective instructional tool, and that is what we want to focus on here. Using modifications such as those listed, you can create a device from the workplace materials that is geared to the reading abilities of a given learner. You can incorporate modifications that help you produce a device that provides both diagnostic information and some success experiences for the learner. After all, if every blank presents the learner with an impossible hurdle, learning motivation may quickly disappear.

By using metacognitive techniques, you can uncover further diagnostic information.[8] If you just see the wrong word in the blank, you may or may not know what caused the error, but having the learner explain out loud the process he or she used in selecting that word gives you much more useful information. Perhaps the learner doesn't read ahead at all, instead picking the word that makes sense based only on the words preceding the blank. Perhaps the learner reads only one word at a time rather than focusing on larger units. Perhaps the learner is unfamiliar with the required make-up of a sentence (e.g., subject and predicate) or the nature of different words (noun, pronoun, verb, adjective, adverb).

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[5] Adapted from E. N. Askov, B. Aderman, and N. Hemmelstein, *Upgrading Basic Skills for the Workplace* (University Park, PA: The Institute for the Study of Adult Literacy, 1989), p. 6-24. (ED 309 297)

[6] D. Norman and R. Balyeat, *A Longitudinal Study of the Effectiveness of the Language Experience Approach Combined with a Form of the Cloze Procedure as a Means of Predicting Reading Performance Among Rural Appalachian Pupils* (Baxter, TN: Upper Cumberland Reading Project, 1974). (ED 094 345)

[7] R. White and W. Jordan, "Vocational Reading in Adult Education," *Adult Literacy and Basic Education* v10/n2 (1986): 90-100.

[8] A metacognitive modeling technique that can be used to approach job materials is described in another learning guide in this series, *Develop a Training Plan and Performance Objectives from the Job and Literacy Task Analyses.*

Not only does this approach give you good diagnostic information, it also provides an opportunity for you to ensure that the experience is a positive one for the learner. You can point out successes as well as diagnosing areas requiring help. If few successes are forthcoming, you can help create some by asking questions that will lead the learner to successful responses. The learner may have difficulty with reading but be occupationally competent. Probing questions which are related to the text and which require the learner to explain occupational concepts to you are an effective tool for establishing the learner as a competent individual with many strengths and accomplishments to be proud of. This can go a long way toward creating a productive instructional atmosphere.

The cloze passage provides ample opportunities for instruction as well. Difficult occupational terminology can be flagged and discussed. Guidelines for effective reading can be introduced (e.g., word attack skills, reading comprehension strategies). Note, too, that this approach to using the cloze procedure involves not just reading skills but oral and listening skills as well. Furthermore, helping the learners analyze the way they approach the reading task involves metacognition and critical thinking skills.

When used for diagnostic purposes, it is helpful to prepare cloze tests at a variety of reading levels to further verify the level of difficulty the learner can handle. Passages relating to a particular subject may be drawn from different sources with different established reading levels. Or, you can take an existing passage and rewrite it to make the reading level simpler or more difficult. On pp. 15-20 are examples[9] of two levels of a workplace-based cloze test relating to content in the field of carpentry; these are preceded on p. 14 with directions for you to use in administering the test and followed on p. 21 by an answer key.

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[9] The cloze assessment package shown on pp. 14-21 was developed by J. S. DeStefano for a National Workplace Literacy Program, using material from the General Motors, Inland Fisher Guide work site. © 1993 by the College of Education, The Ohio State University.

Test Directions

Before administering the test, provide the learners with the following guidelines:

- Read over the whole passage, and then go back and fill in words.
- Try to use the exact word you think the author would have used.
- Write **one** word in each blank.
- If you have trouble guessing a word, skip it; then, after you have finished the whole passage, go back and try again.
- Take as long as you need to finish.

To help the learners, have them complete a sample item first. For example:

This land is your land,
(1) ________________ land is my land.
(2) ________________ California to the New (3) ________________ island,
From the redwood (4) ________________ to the Gulf Stream (5) ________________.
This land was made (6) ________________ you and me.

Go through the sample with them, having them follow the instructions you previously provided. Answer any questions that arise.

CARPENTERS—Level 1

Safety and Job-Site Working Conditions

Accidents on the job can cause you to get hurt, become disabled, or lose your pay. It is also possible that you could die. Accidents cost employers money, too. They (1)______________ to pay for high insurance rates (2)______________ their production is slowed down.

We (3)______________ from past events that most accidents (4)______________ be stopped if we follow the (5)______________ safety rules. Studies done by the (6)______________ stress the following facts.

1. Strain or (7)______________-exertion is the main injury that (8)______________ workers suffer from.
2. Slips or falls (9)______________ work surfaces, high work areas, and (10)______________ make up one-third of all (11)______________ injuries.
3. One-fourth of the injuries (12)______________ from the use of machines or (13)______________, or from the worker being struck (14)______________ a tool or machine.
4. The most (15)______________cause of death on the job (16)______________ is by a moving vehicle.

Besides (17)______________ the safety rules for different tools (18)______________ equipment, carpenters (and other workers) can (19)______________ other safety measures for lowering the (20)______________ ,of accidents. For example, accidents can (21)______________ stopped by a worker's methods and (22)______________. Personal protective devices, good housekeeping, protective (23)______________, proper storage of construction materials, and (24)______________ alert at all times are all (25)______________ that make the job site a (26)______________ place.

Working Habits

Many accidents can be stopped (27)______________ having the right working habits, such (28)______________:

1. Do not place tools where they (29)______________ fall and hurt someone who is (30) ______________ .
2. Watch where you are stepping at (31)______________ times.
3. Look out for the safety (32)______________ yourself and your co-worker.
4. Do not (33)______________ around on the job.

Many workers (34)______________ hurt their backs by poor lifting (35)______________ or by carrying heavy things. If (36)______________ is large or heavy, you need (37)______________ find help so that you can (38)______________ or carry it. Wear gloves if (39)______________ you are carrying has splinters, slivers, (40)______________ sharp edges that could injure your (41) ______________ .

Good Housekeeping

Job accidents on a construction site (42)______________ sometimes caused by general sloppiness, poor (43)______________, and improper storage of materials. All (44)______________ lower your ability to do the (45)______________ well in less time. Rules for (46)______________ housekeeping are—

1. Keep scrap lumber away (47)______________ work areas, passages, and stairs. Bend (48)______________ pull out nails that stick out.
2. (49)______________ sure ground areas within 6 feet (50)______________ a building under construction are fairly (51)______________. Bridge open holes at suitable places (52)______________ that workers can walk.
3. Keep material (53)______________ areas clean.
4. Stack materials in such (54)______________ way that they will not fall, (55)______________, or collapse. A lumber pile should (56)______________ no higher

than 16 feet if (57)______________ is to be handled by hand, (58)______________ 20 feet if it is to (59)______________ handled with equipment.

5. Make sure you (60)______________ clear passages and walkways on the (61)______________. Keep them well lit and free (62)______________ the danger of tripping.
6. Use clean-(63)______________crews to get rid of all (64)______________ materials from the job site.
7. Store (65)______________ and equipment not in use in (66)______________ or toolsheds.
8. Keep slush or snow (67)______________ from work areas or walks before (68)______________ turns to ice. The risk of (69)______________ slip can be lowered by spreading (70)______________, gravel, cinders, or other rough materials (71)______________the work areas.

CARPENTERS—Level 2

Safety and Job-Site Working Conditions

Accidents on the job can cause pain, disablement, and loss of pay to the worker injured. Sometimes they result in death. Accidents are also costly to the (1)______________ in terms of high insurance rates (2)______________ a slowdown of production.

Experience has (3)______________ that most accidents can be prevented (4)______________ proper safety practices. Various studies by (5)______________ agencies stress the following facts:

1. Strain (6)______________ over-exertion is the most common (7)______________ suffered by construction workers.
2. Slips or (8)______________ from work surfaces, high work areas, (9)______________ ladders account for nearly one-third (10)______________ all construction injuries.
3. Worker injuries resulting (11)______________ use of machines and tools, or (12)______________ the worker's being struck by a (13)______________ or machine, account for one-fourth (14)______________ injuries reported.
4. The most common cause (15)______________ death from job-site accidents is (16)______________ accident involving a moving vehicle.

In (17)______________ to following the safety rules for (18)______________ tools and equipment, carpenters (and other (19)______________) can take certain other precautions to (20)______________ the likelihood of accidents. For example, (21)______________can be caused or prevented by (22)______________ worker's methods and clothing. Personal protective (23)______________, good housekeeping, protective railings, proper storage (24)______________ construction materials, and alertness on the (25)______________ of every worker are all necessary (26)______________ in making the job site as (27)______________ as possible.

Working Habits

Many accidents can be (28)______________ by proper working habits such as—

1. (29)______________ not place tools where they may (30)______________ and injure someone who is below (31)______________ .
2. Always watch where you step.
3. Look (32)______________ for the safety of your fellow (33)______________ as well as your own safety.
4. (34)______________ not engage in horseplay on the (35)______________.

Many back injuries and hernias are (36)______________ by improper lifting or carrying of (37)______________ objects. If an object is large (38)______________ heavy, seek help in lifting or (39)______________ it. Wear gloves if the object (40)______________ splinters, slivers, or sharp edges that (41) ______________ injure your hands.

Good Housekeeping

Job hazards on (42)______________ construction site are sometimes caused by (43)______________ sloppiness, poor organization, or careless storage (44)______________ materials. These conditions also reduce job (45)______________. Rules for good housekeeping are—

1. Keep (46)______________ lumber cleared away from work areas, (47)______________, and stairs. Bend or pull out (48)______________ nails.
2. Make sure ground areas within (49)______________ feet of a building under construction (50)______________ reasonably level. Bridge open ditches at (51)______________ places to provide walkways for workers.
3. (52)______________ material storage areas free of obstruction (53)______________ debris.

4. Stack materials in such a (54)______________ that they will not fall, slip, (55)______________ collapse. A lumber pile should not (56)______________ 16 feet in height if it (57)______________ to be handled manually, or 20 (58)______________ if it is to be handled (59)______________ equipment.

5. Maintain well-defined passageways and (60)______________ on the construction site. Keep them (61)______________ lit and free of tripping hazards.

6. (62)______________ clean-up crews to periodically remove (63)______________ waste materials from the job site.

7. (64)______________ tools and equipment not being used (65)______________ chests or toolsheds.

8. Remove slush or (66)______________ from work areas or walkways before (67)______________ turns into ice. Slipping can be (68)______________ by spreading sand, gravel, cinders, or (69)______________ gritty materials over the work areas.

Answer Key

Level 1

(1) have, (2) and, (3) know, (4) can, (5) right, (6) government, (7) over, (8) construction, (9) from, (10) ladders, (11) construction, (12) come, (13) tools, (14) by, (15) common, (16) site, (17) following, (18) and, (19) take, (20) risk, (21) be, (22) clothing, (23) railings, (24) being, (25) factors, (26) safe, (27) by, (28) as, (29) may, (30) below, (31) all, (32) of, (33) horse, (34) have, (35) techniques, (36) something, (37) to, (38) lift, (39) what, (40) or, (41) hands, (42) are, (43) organization, (44) these, (45) job, (46) good, (47) from, (48) or, (49) Make, (50) of, (51) level, (52) so, (53) storage, (54) a, (55) slip, (56) be, (57) it, (58) or, (59) be, (60) have, (61) site, (62) from, (63) up, (64) waste, (65) tools, (66) chests, (67) away, (68) it, (69) a, (70) sand, (71) over.

Level 2

(1) employer, (2) and, (3) proven, (4) by, (5) government, (6) or, (7) injury, (8) falls, (9) and, (10) of, (11) from, (12) from, (13) tool, (14) of, (15) of, (16) an, (17) addition, (18) various, (19) workers, (20) reduce, (21) accidents, (22) a, (23) devices, (24) of, (25) part, (26) factors, (27) safe, (28) prevented, (29) Do, (30) fall, (31) you, (32) out, (33) workers, (34) Do, (35) job, (36) caused, (37) heavy, (38) or, (39) carrying, (40) has, (41) could, (42) a, (43) general, (44) of, (45) efficiency, (46) scrap, (47) passageways, (48) protruding, (49) 6, (50) are, (51) convenient, (52) Keep, (53) and, (54) way, (55) or, (56) exceed, (57) is, (58) feet, (59) with, (60) walkways, (61) well, (62) Use, (63) all, (64) Store, (65) in, (66) snow, (67) it, (68) reduced, (69) other.

Reflection on Reading 1

- Consider a specific occupational situation in a workplace with which you are familiar. What materials would you gather as resources for a workplace literacy program?
- Did you try to complete the cloze passages yourself? If not, do so now, and then check your responses against the answer key. How well did you do? Refer to p. 10 for directions on evaluating your score. ***Bear in mind*** that your score will be affected in this case by whether you have a background in carpentry; learners taking cloze tests using workplace materials, on the other hand, should have the expertise in the occupation that is needed to help them in the reading task.
- How did you feel while taking the test? What caused you difficulty? What did you find frustrating? How could you structure the activity with learners to minimize unpleasant reactions?
- Expressing the learner's reading level as a grade level and evaluating reading materials according to grade level is useful, but it can be a blow to the pride of an adult to be classified as a "1st grade reader." What steps or approach could you take to ensure that use of grade levels does not become a barrier to learner motivation?
- Developing customized curriculum for a workplace literacy program is not a quick and dirty task. According to one source,[10] when project personnel designed 50 percent of the curriculum for a model project, each lesson developed from the literacy task analysis took 3-10 hours to design. Who will have responsibility for this development process (program managers, curriculum development specialists, instructors) in your workplace literacy program? How will they be provided with the amount of time and support necessary to carry out this essential work? How can learners be involved in the lesson development process?

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[10] L. Mikulecky, D. Henard, and P. Lloyd, *A Guidebook for Developing Workplace Literacy Programs* (Bloomington, IN: Indiana University, School of Education, 1992), p. 38. (ED 348 580)

Create Literacy Resources Using Workplace Materials

- Begin to build a file of catalogs and other information about available materials for teaching workplace literacy skills. You may want to contact commercial and non-commercial publishers, government agencies, literacy-focused organizations, libraries in your area, and literacy program managers for help in structuring this activity.

- Organize the materials you acquire by the literacy skills they involve so that you can match appropriate materials to objectives.

- Given job and literacy task (performance and enabling) objectives and workplace materials for a particular job setting in which you are or will be serving as a workplace literacy instructor, match the materials to the objectives.

- Assess the reading level of the materials.

- Create a list of ways to use cloze tests when the focus of the lesson is (a) reading, (b) math, (c) writing, and (d) English as a second language.

- Develop one or more cloze tests using the workplace materials. Outline the procedure you would choose in using the test in an informal setting for diagnostic and instructional purposes. Identify at least five leading questions you could ask to guide the learner in approaching the passage metacognitively.

TOPIC: Create Literacy Resources Using Workplace Materials

Evaluation Guidelines

Directions: Check your competency with the following criteria:

Learner Self-Check		Review Checklist
Did you—		Did the learner—
☐	1. Contact a wide range of agencies in identifying alternative curricular materials for your workplace literacy program?	☐
☐	2. Tap human resources (e.g., program managers, librarians, university personnel) to get ideas about available materials?	☐
☐	3. Identify the criteria you will use in evaluating potential materials?	☐
☐	4. Determine the materials workers use in the performance of specific job tasks?	☐
☐	5. Identify passages and items (e.g., charts, diagrams, tables) that could be used in the achievement of specific objectives?	☐
☐	6. Identify the need for scenario development?	☐
☐	7. Estimate the reading level of the materials using the FORCAST procedure?	☐
☐	8. Develop cloze tests (or modified cloze tests) in accordance with the guidelines provided on pp. 9-11?	☐
☐	9. Outline a procedure for using the cloze test for diagnostic and instructional purposes that would minimize learner anxiety and maximize learner input?	☐
☐	10. Identify at least five questions that would help the learner analyze the process he or she uses in approaching a reading task?	☐

Learner: ______________________

Reviewer: ______________________

Level of Performance: If the evaluation results indicate a need for further competency development—or if the learner wishes to pursue the topics covered in further breadth or depth—please refer to the supplementary resources described in the Annotated Bibliography, which follows.

Askov, E. N.; Aderman, B.; and Hemmelstein, N. *Upgrading Basic Skills for the Workplace.* University Park, PA: The Institute for the Study of Adult Literacy, 1989. (ED 309 297)

In Chapter 6, "Assessment," the authors discuss the cloze procedure and guidelines for its use and provide four examples of the procedure using text drawn from a manual used by a manufacturing company to provide problem-solving training to hourly employees.

Drew, R. A., and Mikulecky, L. *How to Gather and Develop Job Specific Literacy Materials for Basic Skills Instruction.* Bloomington, IN: Indiana University, School of Education, Office of Education and Training Resources, 1988. (ED 297 160)

The practitioner's guide provides guidelines and questions to use in gathering information about literacy tasks and provides examples of literacy task analysis through discrete action steps (e.g., scan, locate, prioritize) as well as techniques for instruction for determining job-related basic skills. Provides practice in Fog and Forcast readability formulas.

Foran, J. V.; Pucel, D. J; Fruehling, R. T.; and Johnson, J. C. *Effective Curriculum Planning: Performance, Standards, and Outcomes.* Eden Prairie, MN: Paradigm, 1992.

The document's six chapters are designed to help those involved in planning job-related curricula. The topics covered include teaching for meaning and relevance, analyzing jobs and performance standards, planning curriculum and assessment, and applying teaching techniques for workplace success. Key chapters include practice activities that program participants can complete either individually or in curriculum planning teams.

Harrison, C. "Cloze Procedure as a Measure of Readability." In *Readability in the Classroom.* Cambridge, England: Cambridge University Press, 1980.

This chapter presents Taylor's original concept of the cloze procedure, as well as critiques of the procedure by later researchers. Four uses of the procedure are described in depth: readability measurement, standardized comprehension testing, diagnosis of individual readers' abilities or deficiencies, and reading development. Step-by-step procedures and guidelines for developing cloze tests are also provided.